S/048/59/023/011/009/012
B006/B056

AUTHOR: Trofimov, A. K.

TITLE: The Use of Luminescence for the Investigation of Reactions in Solid Phases in the System CaO_4-Al_2O_3

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol. 23, No. 11, pp. 1355-1359

TEXT: The author already gave a report on the crystallochemical investigations he carried out previously (Ref. 1); because of the great sensitivity of luminescence line spectra of rare earth- or chromophosphors to variations of the crystal structure, crystallochemical transformations may be well observed by means of the luminescence spectra. These investigations are mainly confined to determinations of the temperature limits of the existence of the individual solid phases. The spectra are, however, also suited for the observation of processes in complicated compositions of solid phases and the identification of the chemical composition of the individual phases. Arbitrary crystal-structural processes may be followed which had already been investigated by other methods, and comparisons may be drawn. For this purpose, the author chose the system CaO-Al_2O_3, which

The Use of Luminescence for the Investigation of Reactions in Solid Phases in the System CaO_4-Al_2O_3

S/048/59/023/011/009/012
B006/B056

is of especial importance for cement production. By means of the luminescence line spectrum the author investigated the complex chemical reaction CaO and Al_2O_3, where Eu and Sm were used as activators. The investigations were carried out in the solid phase and with excitation by means of a GOI-phosphoroscope; recordings were made by means of a diffraction spectrograph (dispersion of the devices: 50 and 25 A/mm). A total of 36 original spectra are shown in four figures. They are discussed in all details in the following. Fig. 1 shows: CaO - Eu, Al_2O_3 - Eu, CaO - Sm, and Al_2O_3 - Sm; Fig. 2: 3 $CaO \cdot Al_2O_3$ - Eu, $CaO \cdot Al_2O_3$ - Eu, $CaO \cdot 2Al_2O_3$ - Eu, $CaO \cdot 6Al_2O_3$ - Eu, Al_2O_3 - Eu, and CaO - Eu, annealed at 1400° during one hour; Fig. 3: mixtures of various ratios of CaO + Al_2O_3 (annealed at 1400°) - Table 2 shows the composition for 18 investigated mixtures. Fig. 4: $CaO \cdot 6Al_2O_3$ annealed for 1 hour at 8 various temperatures between 700 and 1400°, and, for comparison, again the Al_2O_3-Eu and CaO-Eu spectra. Table 1 shows the exact spectral analysis of Fig. 2 - the wave lengths and the intensity ratios of the calcium aluminate lines investigated. From the lines found it is

Card 2/4

possible to draw conclusions as to the manner in which the reactions develop. In detail, the following reactions are assumed: 1) $3CaO \cdot Al_2O_3$ occurs at 1200° in a $3CaO + Al_2O_3$ mixture, at lower temperatures $CaO \cdot Al_2O_3$ is produced, and the following reaction develops: $CaO \cdot Al_2O_3 + 2CaO \rightarrow 3CaO \cdot Al_2O_3$. 2) No $5CaO \cdot 3Al_2O_3$ was found up to 1400°. 3) CaO-Al_2O_3 forms very rapidly within the range of 900 to 1000°. 4) $CaO \cdot 2Al_2O_3$ occurs at 1000°: $CaO \cdot Al_2O_3 + Al_2O_3 \rightarrow CaO \cdot 2Al_2O_3$. 5) $CaO \cdot 6Al_2O_3$ occurs at 1100°: $CaO \cdot 2Al_2O_3 + 4Al_2O_3 \rightarrow CaO \cdot 6Al_2O_3$ or $CaO \cdot Al_2O_3 + 5Al_2O_3 \rightarrow CaO \cdot 6Al_2O_3$. The author finally thanks P. P. Feofilov for his supervision and friendly assistance in carrying out the investigation. There are 4 figures, 2 tables, and 7 references: 4 Soviet.

The Use of Luminescence for the Investigation of Reactions in Solid Phases in the System CaO_4-Al_2O_3

S/048/59/023/011/009/012
B006/B056

ASSOCIATION: Gos. opticheskiy institut im. S. I. Vavilova
(State Optics Institute imeni S. I. Vavilov)

Card 4/4

TROFIMOV, A. K., Cand Chem Sci - (diss) "Solution of some chemical problems by means of observation of ruled spectra of the luminescence of crystal phosphors." /Leningrad/, 1960. 13 pp; (State Order of Lenin Optical Institute im S. I. Vavilova); 150 copies; price not given; (KL, 19-60, 130)

TROFIMOV, A.K.

PHASE I BOOK EXPLOITATION SOV/4443

Akademiya nauk SSSR. Komissiya po analiticheskoy khimii

Metody opredeleniya primesey v chistykh metallakh (Methods of Determining Admixtures in Pure Metals) Moscow, 1960. 411 p. (Series: Its: Trudy, 12) 3,500 copies printed.

Resp. Eds.: A.P. Vinogradov, Academician, and D.I. Ryabchikov, Doctor of Chemical Sciences; Ed. of Publishing House: N.P. Volynets; Tech. Ed.: T.V. Polyakova.

PURPOSE: This collection of articles is intended for chemists, metallurgists, and engineers.

COVERAGE: The articles describe methods for detecting and determining various admixtures and their traces in pure metals. Also discussed are many chemical, physicochemical, electrochemical, spectrochemical and luminescence methods of analyzing materials of high purity. The editors state that these methods have been developed within the last five or six years by various Soviet scientific institutes, and are now widely used in research and factory laboratories of the Soviet Union. No personalities are mentioned. References, mostly Soviet, accompany each article.

AVAILABLE: Library of Congress

ARAPOVA, E.Ya.; BARANOVA, Ye.G.; LEVSHIN, V.L.; TIMOFEYEVA, T.V.; TROFIMOV, A.K.; FEOFILOV, P.P.

Luminescent method of quantitative determination of gadolinium in metallic beryllium. Trudy Kom. anal. khim. 12:344-354 '60. (MIRA 13:8)

(Beryllium--Analysis) (Gadolinium earths)

S/048/61/025/004/007/048
B104/B201

24.3500

AUTHOR: Trofimov, A. K.

TITLE: Luminescence of lanthanides in thorium oxide

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 4, 1961, 460-461

TEXT: The present paper has been read at the 9th Conference on Luminescence (Crystal Phosphors), Kiyev, June 20-25, 1960. The microchemical luminescence determination of rare earth elements consists in observing the luminescence of crystal phosphors containing the said elements as activators. Thorium oxide is indicated as the most important compound suited for studies of this kind. Very little work has been, however, done in this direction, and the lack of data regarding the emission spectrum, the limiting concentration of the activator, etc., is felt. The author wanted to study the luminescence spectrum of trivalent lanthanides in thorium oxide, and to clarify the problem, as to whether these elements might be usable in analytical chemistry. The luminescence of these phosphors is excited by shortwave UV; an arc phosphoroscope of the type ГОИ

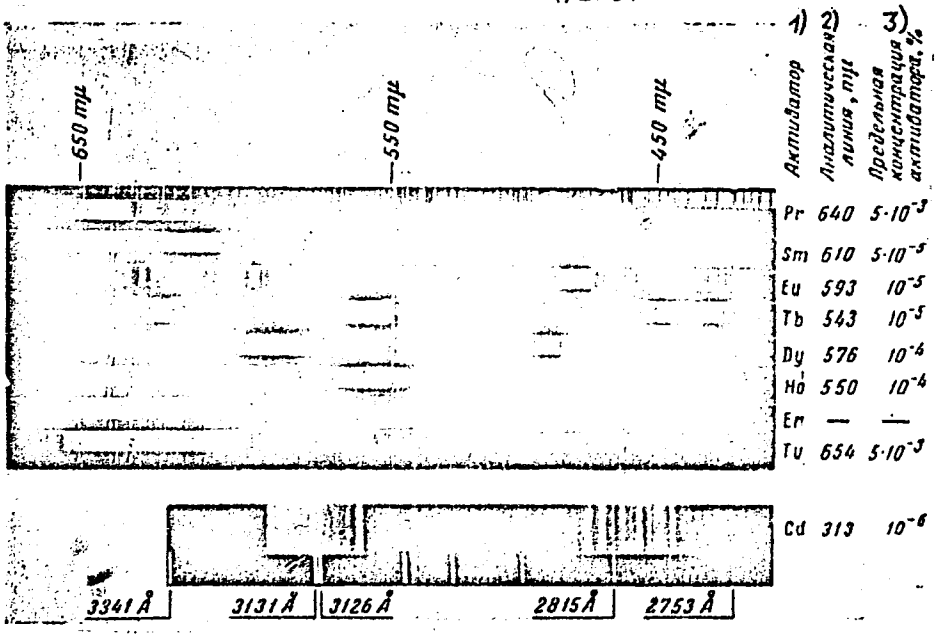
Card 1/3

(GOI) was used to observe the luminescence in any spectral region, without having to use light filters. The luminescence of Gd is in the ultraviolet, that of Pr, Sm, Eu, Tb, Dy, Ho, Er, and Th, and also of ThO_2 is in the visible spectral region. Lines suited for the analysis were established in almost all of the elements. In Er, Ho, and Tb strong groups of lines are situated at nearly the same place in the spectrum. The lower limiting concentrations are presented in the figure, the upper is for all at 0.1 %. The emission of Nd and Yb is in the infrared region, and is therefore not suited for photographic methods. Crystalline thorium oxide is not only a good base for rare-earth phosphors, but also a good acceptor for the lanthanide ions. The effect of directional thermal diffusion has been worked out by the author for the quantitative determination of gadolinium in metallic beryllium (Ref. 7: Arapova, E. Ya. et al., Tr. Komissii po analit. khimii, 12, 344, (1960)). This method also permits the microchemical determination of lanthanides in minerals. P. P. Feofilov is thanked for his aid in the measurements. There are 1 figure and 7 references: 5 Soviet-bloc and 2 non-Soviet-bloc. The two references to English-language publications read as follows: Ref. 1: Nichols E. L., Wick F. G., J. Opt. Soc. America, 22, 357, (1932); Ref. 2: Wick F. G., Troupp Ch. G., J. Opt. Soc. America, 25, 57, (1935).

22158
S/048/61/025/004/007/048
B104/B201

Luminescence of...

Legend to Fig. 1: 1) activator; 2) analytic line; 3) limiting concentration of the activator in %.



1) Активатор	2) Аналитическая линия, mμ	3) Предельная концентрация активатора, %
Pr	640	$5 \cdot 10^{-3}$
Sm	610	$5 \cdot 10^{-5}$
Eu	593	10^{-5}
Tb	543	10^{-5}
Dy	576	10^{-4}
Ho	550	10^{-4}
Er	—	—
Tu	654	$5 \cdot 10^{-3}$
Cd	313	10^{-6}

Card 3/3

~~Skrestkov, Yu.A.~~
TROFIMOV, A.K.

105

PHASE I BOOK EXPLOITATION SOV/6181

Ural'skoye soveshchaniye po spektroskopii. 3d, Sverdlovsk, 1960. Materialy (Materials of the Third Ural Conference on Spectroscopy) Sverdlovsk, Metallurgizdat, 1962. 197 p. Errata slip inserted. 3000 copies printed.

Sponsoring Agencies: Institut fiziki metallov Akademii nauk SSSR. Komissiya po spektroskopii; and Ural'skiy dom tekhniki VSNTO.

Eds. (Title page): G. P. Skornyakov, A. B. Shayevich, and S. G. Bogomolov; Ed.: Gennadiy Pavlovich Skornyakov; Ed. of Publishing House: M. L. Kryzhova; Tech. Ed.: N. T. Mal'kova.

PURPOSE: The book, a collection of articles, is intended for staff members of spectral analysis laboratories in industry and scientific research organizations, as well as for students of related disciplines and for technologists utilizing analytical results.

COVERAGE: The collection presents theoretical and practical problems of the application of atomic and molecular spectral analysis in controlling the chemical composition of various materials in ferrous and nonferrous metallurgy, geology, chemical industry, and medicine. The authors express their thanks to G. V. Chentsova for help in preparing the materials for the press. References follow the individual articles.

TROFIMOV, A.M.

AUTHOR GREBENSHCHIKOVA, V.I., TROFIMOV, A.M.

TITLE The All-Union Congress on Radiochemistry. (Vsesoyuznoye soveshchaniye po radiokhimii.- Russian)

PERIODICAL Atomnaya Energiya 1957, Vol 2, Nr 6, pp 562-563 (USSR).

ABSTRACT This congress, which took place at Leningrad, was attended by about 600 scientists from various cities of the country. The 50 lectures delivered on this Congress dealt with the main problems of theoretical radiochemistry and the chemistry of some radioactive elements. Also the form of the existence of small quantities of radioactive substances in solutions and solids, as well as their behavior on the occasion of precipitation with carriers, the laws of the distribution between two non-mixing phases, the chemistry of technetium, promethium, and the transplutonium elements (americium, curium, berkelium, californium) etc. was dealt with. The central problem of radiochemistry consists in the investigation of the state of radioactive elements in diluted solutions and of their behavior on the occasion of precipitation with crystalline deposits.

CARD 1/3

The All-Union Congress on Radiochemistry.

I.E.STARIK and his collaborators established the fact of the existence of true colloids in substances which are in solution in extreme dilutions. By this the production of truly colloidal solutions of radioactive substances, which had been denied for a long time, is confirmed.

By combining different methods of investigation for colloidal solutions it is possible, univocally to determine the portion of the matter existing in the solution in the iron state as well as in form of true colloids and pseudo-colloids. The Congress also discussed several problems connected with the application of adsorption processes in chemical practice. The results of theoretical and experimental investigations concerning the following problems were dealt with:
Theory of ion exchange, chromatographical separation of rare earths and transuranium, determination of the state of radioactive elements in a solution by their adsorption on glass, and ion-exchange-resins, selective adsorption of some radioactive elements on ion-exchange resins, silicate-gel, and on other porous adsorbents. The Congress arranged

CARD 2/3

89-58[illegible]/34

The All-Union Congress on Radiochemistry.

the further working program. (No Illustrations.)

ASSOCIATION: not given.
PRESENTED BY: -
SUBMITTED: -
AVAILABLE: Library of Congress.

CARD 3/3

5(2); 21(5) PHASE I BOOK EXPLOITATION SOV/1900

Akademiya nauk SSSR. Komissiya po analiticheskoy khimii

Primeneniye radioaktivnykh izotopov v analiticheskoy khimii (Use of Radioactive Isotopes in Analytical Chemistry) Moscow Izd-vo AN SSSR, 1958. 366 p. [Series: Its: Trudy, t. 9 (12)] Errata slip inserted. 3,000 copies printed.

Resp. Ed.: I.P. Alimarin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: A.N. Yermakov; Tech. Ed.: T.V. Polyakova.

PURPOSE: The book is intended for chemists and chemical engineers concerned with work in analytical chemistry.

COVERAGE: The book is a collection of the principal papers presented in Moscow at the Second Conference on the Use of Radioactive Isotopes. The problems discussed at the Conference included coprecipitation, aging, and solubility of precipitates, determination of the instability constants

Card 1/10

of complex compounds, separation of rare earth metals, and ion-exchange chromatography. No personalities are mentioned. There are 351 references, 175 of which are Soviet, 33 German, 19 French, 8 Swedish, 2 Hungarian, and 2 Czech.

TABLE OF CONTENTS:

Use of Radioactive Isotopes (Cont.) SOV/1900

Card 5/10

NIKOL'SKIY, B.P.; TROFIMOV, A.M.

Chromatographic separation of uranium and thorium by means of ion-exchanging resins. Trudy Radiev.inst.AN SSSR. 8:189-197 '58. (MIRA 12:2)
(Uranium) (Thorium) (Base-exchanging compounds)

IL'YENKO, Ye.I.; NIKO'SKIY, B.P.; TROFIMOV, A.M.

Adsorption of ruthenium from aqueous solutions by ion-exchanging resins. Trudy kom.anal.khim. 9:148-160 '58. (MIRA 11:11)
(Ion exchange) (Ruthenium) (Adsorption)

NIKOL'SKIY, B.P.; TROFIMOV, A.M.; VYSOKOOSTROVSKAYA, N.B.

Complex formation of barium and radium in trilon B solutions.
Radiokhimiia 1 no.2:147-154 '59. (MIRA 12:8)
(Barium compounds) (Radium compounds) (Acetic acid)

NIKOL'SKIY, B.P.; TROFIMOV, A.M.; VYSOKOOSTROVSKAYA, N.B.

Reaction of radium and barium with nitrilotriacetic acid in aqueous solutions. Radiokhimiia 1 no.2:155-161 '59.
(MIRA 12:8)

(Radium) (Barium) (Acetic acid)

NIKOL'SKIY, B.P.; TROFIMOV, A.M.; PANFILOVA, G.G.

Adsorption of zirconium and niobium by silica gel. Radiokhimiia 1 no.3:283-289 '59. (MIRA 12:10)
(Zirconium) (Niobium) (Silica)

TROFIMOV, A.M.; STEPANOVA, L.N.

Change in the magnitude of the charge of zirconium ions in a nitric acid solution, as determined by means of ion exchange resins. Radiokhimiia 1 no.4:403-407 '59. (MIRA 13:1)
(Zirconium--Isotopes)

5(4) SOV/78-4-4-24/44

AUTHORS: Nikol'skiy, B. P., Trofimov, A. M., Vysokoostrovskaya, N. B.

TITLE: Investigation of the Behavior of Potassium Ions in Solutions of Ethylenediamine Tetraacetic Acid by the Ion Exchange Method and a Potassium Glass Electrode (Issledovaniye povedeniya ionov kaliya v rastvorakh etilendiamintetrauksusnoy kisloty s pomoshch'yu ionnogo obmena i kaliyevogo steklyannogo elektroda)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 4, pp 857-861 (USSR)

ABSTRACT: The authors investigated the behavior of potassium ions in solutions of ethylenediamine tetraacetic acid (EDTA) by the method of ion exchange by means of the radioactive indicator K^{42} and by the potentiometric method by means of a potassium glass electrode. The interaction of potassium with EDTA was investigated by means of the cation exchanger KU-2 in the Na form and by means of the anion exchanger AV-17 in the Cl form. The results are listed in table 1. It was found that potassium ions within the pH range 6-11 form no complex with

Card 1/2

Investigation of the Behavior of Potassium Ions in Solutions of Ethylenediamine Tetraacetic Acid by the Ion Exchange Method and a Potassium Glass Electrode

EDTA. In order to check this statement, the authors made experiments concerning the adsorption of potassium on the anion exchangers AV-17 and Dowex-1 from solutions without sodium ions and with an EDTA concentration of 0.25 m at pH 7.6-11. The results are given in table 2. The potentiometric investigations indicated that with increasing EDTA concentration no complex is formed in the solution since the electromotive force of the galvanic cell remains constant. The results of the potentiometric investigations are given in table 3. There are 3 tables and 8 references, 6 of which are Soviet.

ASSOCIATION: Radiyevyy institut AN SSSR im. V. G. Khlopina (Radium Institute of the AS USSR imeni V. G. Khlopin)

SUBMITTED: June 21, 1958

TROFIMOV, A.M.

GINZBURG, F.L.

21 (0), 5 (0)

AUTHOR: Shchebetkovskiy, V. N. SOV/89-7-2-17/24

TITLE: All-Union Symposium on Radiochemistry (Vsesoyuznyy simpozium po radiokhimii)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 2, pp 175-176 (USSR)

ABSTRACT: A symposium was held in Leningrad from 3 to 5 March 1959. More than 200 participants from different institutes in Moscow, Leningrad, Kiyev, Novosibirsk, Tbilisi and Gor'kiy attended it. Twentyeight papers were read. The following are mentioned: I. Ye. Starik: On the problem of the molecular state of micromasses of radioactive elements in solutions; I. Ye. Starik, N. I. Ampelogova, F. L. Ginzburg, L. I. Il'menkova, I. A. Skul'skiy, L. D. Sheydina: Condition of radioactive elements occurring in microconcentrations of solutions (Zr, Am, Pa, Po). M. N. Yakovleva, M. A. Shurshalina: Application of the dialysis method for examination of uranium carriers in natural bodies of water. V. I. Paramonova, Ye. F. Latysheva: Complex formation of the multivalent ruthenium with chlorine ions. K. B. Zaborenko, A. V. Zaval'skaya, V. V. Fomin: Determination of the composition and the instability constants by ion exchange of the cerium oxalate complexes. A. I. Moskvin: Complex formation of plutonium and americium with the anions of

Card 1/3

ethylene diamine tetra acetic acid (EDTA) and oxalic and phosphoric acid. A. M. Trofimov, L. N. Kazanova: A new method for the determination of ion charges of radioactive elements in solutions by application of ion exchanging resins of different swelling capacities. N. B. Vysokoostrovskaya, A. M. Trofimov, B. N. Nikol'skiy: Confirmation of the non-existence of complex formation between potassium and EDTA by application of the ion exchange and the potentiometric methods. V. M. Vdovenko, Ye. A. Smirnova: Determination of the conditions of compounds to be extracted in the organic phase (hydration of uranyl nitrate with ester). V. M. Vdovenko, N. V. Aleksandrova: Degree of hydration of nitric acid in dibutyl ether of the diethylene glycol. V. M. Vdovenko, A. S. Krivokhatskiy: Degree of solvation of the nitric acid in the dibutyl ether of the diethylene glycol. A. I. Lavrukhina: Determination of the dependency of the distribution coefficients between the organic and the watery phases in order to determine the condition of the substance in the solution and to fixate the concentration range at which complex formation starts. V. I. Kuznetsov, P. D. T...v lectured on extraction of hexavalent tungsten with aniline from hydrochloric media. An. N. Nesmeyanov on substitution of hydrogen in benzol by the recoil atoms P^{32}, As^{76} and Sb^{124}. B. G. Dzantiyev lectured on the recoil atoms from the reactions of $Li^{6}(n,\alpha)T$, $N^{14}(n,p)C^{14}$ in a medium of cyclic hydrocarbons. [illegible] lectured on the influence of the NO_3 and H^+ ions on the reduction velocity

Card 2/3

of hexavalent plutonium under the influence of its own α-radiation. In the course of thorough discussions it was established that the comprehension of the condition of radioactive elements in solution are of eminent importance for the whole range of radio chemistry. More studies have to be made in this field as were made before. A better coordination of all the institutes which are occupied with this problem will yield good results in the future.

25

TROFIMOV, A. N.
LATYSHEV, G. D.

176

PHASE I BOOK EXPLOITATION SOV/5410

Tashkentskaya konferentsiya po mirnomu ispol'zovaniyu atomnoy energii, Tashkent, 1959.

Trudy (Transactions of the Tashkent Conference on the Peaceful Uses of Atomic Energy) v. 2. Tashkent, Izd-vo AN UzSSR, 1960. 449 p. Errata slip inserted. 1,500 copies printed.

Sponsoring Agency: Akademiya nauk Uzbekskoy SSR.

Responsible Ed.: S. V. Starodubtsev, Academician, Academy of Sciences Uzbek SSR. Editorial Board: A. A. Abdullayev, Candidate of Physics and Mathematics; D. M. Abduramulov, Doctor of Medical Sciences; U. A. Arifov, Academician, Academy of Sciences Uzbek SSR; A. A. Borodulina, Candidate of Biological Sciences; V. N. Ivashev; G. S. Ikramova; A. Ye. Kiv; Ye. M. Lobanov, Candidate of Physics and Mathematics; A. I. Nikolayev, Candidate of Medical Sciences; D. Nishanov, Candidate of Chemical Sciences; A. S. Sadykov, Corresponding Member, Academy of Sciences USSR, Academician, Academy of Sciences Uzbek SSR; Yu. N. Talanin,

Card 1/20

Transactions of the Tashkent (Cont.) SOV/5410

Candidate of Physics and Mathematics; Ya. Kh. Turakulov, Doctor of Biological Sciences. Ed.: R. I. Khamidov; Tech. Ed.: A. G. Babakhanova.

PURPOSE : The publication is intended for scientific workers and specialists employed in enterprises where radioactive isotopes and nuclear radiation are used for research in chemical, geological, and technological fields.

COVERAGE: This collection of 133 articles represents the second volume of the Transactions of the Tashkent Conference on the Peaceful Uses of Atomic Energy. The individual articles deal with a wide range of problems in the field of nuclear radiation, including: production and chemical analysis of radioactive isotopes; investigation of the kinetics of chemical reactions by means of isotopes; application of spectral analysis for the manufacturing of radioactive preparations; radioactive methods for determining the content of elements in the rocks; and an analysis of methods for obtaining pure substances. Certain

Card 2/20

Transactions of the Tashkent (Cont.) SOV/5410

instruments used, such as automatic regulators, flowmeters, level gauges, and high-sensitivity gamma-relays, are described. No personalities are mentioned. References follow individual articles.

TABLE OF CONTENTS:

Card 3/20

S/054/60/000/004/007/015
B004/B056

AUTHORS: Trofimov, A. M., Stepanova, L. N.

TITLE: Investigation of the Exchange of Ions of Different Valences on Swelling Ion Exchangers and Application of the Rules Found for the Determination of the Ion Charge in the Solution

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1960, No. 4, pp. 70-76

TEXT: Proceeding from B. P. Nikol'skiy's theory of ion exchange, the ion exchange in highly swelling exchange resins has been studied by radiochemical methods at the Radiyevyy Institut AN SSSR (Radium Institute of the AS USSR). It was experimentally established that the different swelling capacity greatly affects the selective adsorption in the exchange of ions of different valency. This is indicative of a different concentration of adsorbed ions in the resin. The ion exchange of КУ-2 (KU-2)-type and МСФ (MSF)-type resins was investigated by means of Ce^{144}, Ra^{226}, and Cs^{134}. The following equation was derived for calculating the ion charge z:

$$z = \left[\log(\alpha^{I}/\alpha^{II}) + \log(v^{II}/v^{I})\right] / \left[\log(g^{I}/g^{II}) + \log(v^{II}/v^{I})\right]$$

. Here,

Card 1/2

Investigation of the Exchange of Ions of Different Valences on Swelling Ion Exchangers and Application of the Rules Found for the Determination of the Ion Charge in the Solution

S/054/60/000/004/007/015
B004/B056

α^{I}, α^{II} denote the distribution coefficients which were determined experimentally in resins with different specific volumes V^{I}, V^{II}, and different specific capacities g^{I}, g^{II}. This method of different ion concentrations in the resin phase was used to determine the charge of zirconium ions (Ref. 9) and, together with A. A. Grinberg, to determine the charge of ruthenium complexes (Ref. 10). G. V. Samsonov and A. B. Pashkov are mentioned. There are 2 tables and 10 references: 5 Soviet, 3 US, 1 British, and 1 German.

Card 2/2

S/186/60/002/001/013/022
A057/A129

AUTHORS: Grinberg, A.A.; Trofimov, A.M.; Stepanova, L.N.

TITLE: Determination of the charge of polynuclear complex ruthenium ions by the ion-exchange method

PERIODICAL: Radiokhimiya, v. 2, no. 1, 1960, 78 - 82

TEXT: The present investigation was carried out after a visit of one of the present authors in the laboratory of J.M. Fletcher in Harwell (England) in connection with some new data (reported by Fletcher et al. at the International Conference on Coordination Chemistry, London, May 6, 1959, under the title: binuclear chloro and other polynuclear complexes of ruthenium) concerning ruthenium complexes. In the discussion the investigators stated the importance of direct determination of the charge of the red polynuclear ruthenium cation, for which the British chemists assumed a charge of +6. Definite solution of this question was of interest apart from the verification of data obtained by Fletcher et al., because complex anions with charges greater than four are rare. F.M. Jaeger and P. Koets [Ref. 3: Z. anorg. Ch., 170, 347 (1928)] reported about nine-valent cations, but their existence is at present in question [J.C. Bailar, Ref. 4: Chem-

Card 1/5

istry of the Coordination Compounds, 65, N.Y. (1956)]. Hence it was important to discover a method to determine the charge of highly-charged cations. Thus the present authors investigated the applicability of the recently published ion-exchange method [A.V. Trofimov and L.N. Stepanova, Ref. 2: Radiokhimiya, 1, 4, 403 (1959)] to the determination of the charge of the red polynuclear ruthenium cation. In further investigations this method will be applied to check data obtained by Jaeger and Koets. In the present experiments a sample of the ruthenium complex synthesized by Fletcher et al. was used. The principle of the ion-exchange method consists in the determination of the distribution coefficient α of radioisotopes on two ion-exchange resins with different swelling capacities. According to the rules of ion-exchange:

$$\lg \frac{a^I}{a^{II}} = \frac{z_1}{z_2} \lg \frac{G^I}{G^{II}} + \frac{z_1 - z_2}{z_2} \lg \frac{V^{II}}{V^I} \quad (1)$$

I and II refer to the resins with two swelling capacities, z_1 - effective charge of the investigated ions; z_2 - charge of the exchanged ions, G^I and G^{II} equivalent exchange capacity of the resins (per 1 g of dry resin), V^I and V^{II} - specific volumes of swollen resins under the conditions of the distribution coefficient determination. In the exchange of mono-valent ions (H^+, Na^+ etc.), the charge can be calculated by:

$$z = \frac{\lg \frac{a^I}{a^{II}} + \lg \frac{V^{II}}{V^I}}{\lg \frac{G^I}{G^{II}} + \lg \frac{V^{II}}{V^I}} \quad (2)$$

and if the equivalent exchange capacities of the two resins are the same:

$$z = \frac{\lg \frac{a^I}{a^{II}}}{\lg \frac{V^{II}}{V^I}} + 1 \quad (3)$$

Card 2/5

Determination of the charge of polynuclear....

The experimental determination of α as well as of the specific volumes of the swollen ion-exchange resin must be carried out under the same conditions. The investigated element must be ions. The ion-exchange must be strictly reversible and the complexes must be stable. According to Ye.I. Il'yenko, B.P. Nikol'skiy and A.M. Trofimov [Ref. 5: Tr. komissii po analiticheskoy khimii (Proceedings of the commission for analytical chemistry), Izd. AN SSSR (Ed. AS USSR), 9 (12), 148 (1958)] reversibility is not always maintained in exchange of ruthenium complexes. The present authors demonstrated in corresponding experiments that by adding HNO_3 solution the red complex changes into a yellow complex, thus exchange using H^+ ions cannot be carried out. It was observed that in $NaNO_3$ solutions the complex is stable, and is strongly adsorbed on sulfonated KU-2 (KU-2) cation exchange resin. About 50% of the red complex is adsorbed from 3.5 N $NaNO_3$ solution. Solutions containing between 0.5 and 5 mg/l ruthenium obey Beer's law with an absorption maximum at 460 mμ. Thus the present experiments were carried out with concentrations of 1.5 mg Ru/l, reversibility was tested and α was determined as ~3,400. Two samples of the resin (containing 2% or 12% divinylbenzene) were soaked in 3.5 N $NaNO_3$ solution and the specific volumes were determined picnometrically with octane resin with 2% divinylbenzene 1.83 ± 0.01 ml/g; with 12% divinylbenzene 1.37 ± 0.01 ml/g. The swelling capacity is doubled in water.

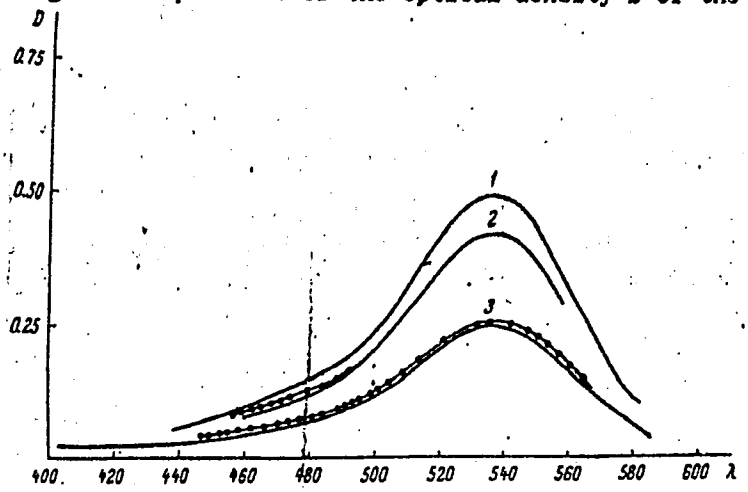
Card 3/5

Since the exchange capacities for both resins are 4.83 - 4.85 mg equiv/g the calculations were done according to equation (3). The concentration of ruthenium in the initial and in equilibrated solutions was determined with a recording СФ-2М (SF-2M) spectrophotometer and ФЭК-2М (FEK-2M) photoelectrocolorimeter using green filters. From the obtained results (see Fig.) the charge of the complex was calculated with z = 5.9. Thus data presented by Fletcher et al. are confirmed; on the other hand it is demonstrated that the present method can be used for determinations of the charge of polynuclear complexes. There are: 1 figure and 5 references: 2 Soviet-bloc and 3 non-Soviet-bloc.

SUBMITTED: November 13, 1959

Determination of the charge of polynuclear....

Figure: Dependence of the optical density D of the solutions on wavelength in m . 1 - initial solution; 2 - solution equilibrated with 2% divinylbenzene containing resin; 3 - solution equilibrated with the resin containing 12% divinylbenzene.



Card 5/5

TROFIMOV, A.M.; STEPANOVA, L.N.

Study of the exchange of ions of various valences on swelling ion exchangers, and application of the mechanisms discovered to the determination of the ionic charge in solution [with summary in English]. Vest. LGU 15 no.22:70-76 '60. (MIRA 13:11)
(Ion exchange)

06156

S/076/60/034/008/029/039/XX
B015/B063

26.1610

AUTHORS: Trofimov, A. M. and Stepanova, L. N.

TITLE: Radiochemical Study of Ion Exchange on Swollen Ion Exchangers

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 8, pp. 1837 - 1842

TEXT: Contrary to K. K. Gedroyts (Ref.1), B. P. Nikol'skiy (Ref.2), and Ye. N. Gapon (Ref.3) who discussed ion exchange with standard ion exchangers, the present authors discuss the behavior of swollen ion exchangers. This subject has also been discussed by Gregor (Ref.4), G. V. Samsonov (Ref.5), and Griessbach (Ref.6). Experiments have shown that the difference in the swelling capacity of ion exchangers has a particularly strong effect on the selectivity of exchange of ions of different valencies. The selective adsorption of ions of higher valency sharply increases with a decrease of the swelling capacity of the exchanger. This is ascribed to the varying ion concentration in the solid phase of ion exchangers with different swelling capacity. The rule of this phenomenon was theoretically and experimentally studied by the radio-

Card 1/3

86155

Radiochemical Study of Ion Exchange on Swollen Ion Exchangers

S/076/60/034/008/029/039/XX
B015/B063

chemical method. The selectivity of adsorption of a radioactive element on two different ion exchangers may be determined from the ratio between the distribution coefficients α:

$$\alpha_1^I/\alpha_1^{II} = (g^I/g^{II})^{z_1/z_2} \cdot (V^{II}/V^I)^{z_1-z_2/z_2} \cdot (f_2^I/f_2^{II})^{z_1/z_2} \cdot (f_1^{II}/f_1^I) \quad (8),$$

where I and II refer to the two exchangers; g is the absorbed quantity of ions per weight unit of the exchanger; V is the specific volume of the swollen exchanger; z_1 and z_2 denote the ion valency; and f_1 and f_2 are their activity coefficients. g and V may be easily determined by way of experiment. The acitivity coefficients can be represented by the function $\varphi(f) = (f_2^I/f_2^{II})^{z_1/z_2} \cdot f_1^{II}/f_1^I$ (9). The experiments were performed with МСФ (MSF) and КУ-2 (KU-2) exchangers which had been made available by A. B. Pashkov, and the distribution of Ce^{144}, Ra^{226}, and Cs^{134} in KCl solutions was studied. The measurements indicate that the swelling capacity of an exchanger greatly affects the distribution of ions of different valencies among exchanger and solution. Using the equation

Card 2/3

86156

Radiochemical Study of Ion Exchange on Swollen Ion Exchangers

S/076/60/034/008/029/039/XX
B015/B063

$\alpha V^{(z_1-z_2)/z_2} / g^{z_1/z_2}$ = const. it is possible to determine the valency of a radioactive element in a solution by using two exchangers with equal specific exchange capacity but different swelling capacity. B.P.Nikol'skiy is thanked for a discussion. Polyanskiy is mentioned. There are 3 tables and 6 references: 4 Soviet, 1 US, and 1 German.

ASSOCIATION: Akademiya nauk SSSR Radiyevyy institut im. V. G. Khlopina (Academy of Sciences USSR, Radium Institute imeni V. G. Khlopin)

SUBMITTED: December 7, 1958

Card 3/3

STUPISHIN, A.V., prof.; BABANOV, Yu.V., ml. nauchn. sotr.; GUSEVA, A.A., ml. nauchn. sotr.; DUGLAV, V.A., dots.; ZAKHAROV, A.S., dots.; KOSTINA, N.M., assistent; LAVROV, D.D., dots.; LAPTEVA, N.N., assistent; ROMANOV, D.F., ml. nauchn. sotr.; SIROTKINA, M.M., aspirant; SMIRNOVA, T.A., ml. nauchn. sotr.; TORSHYEV, N.P., st. prepod.; TAYSIN, A.S., st. prepod.; TROFIMOV, A.M., assistent; KHARITONYCHEV, A.T., prepod.; STUPISHIN, A.V., red.; KHABIBULLOV, R.K., red.

[Establishing physicogeographical regions in the middle Volga Valley] Fiziko-geograficheskoe raionirovanie Srednego Povolz'ia. Kazan', Izd-vo Kazanskogo univ., 1964. 196 p. (MIRA 18:12)

TROFIMOV, A.M.; KAZANKIN, Yu.N.

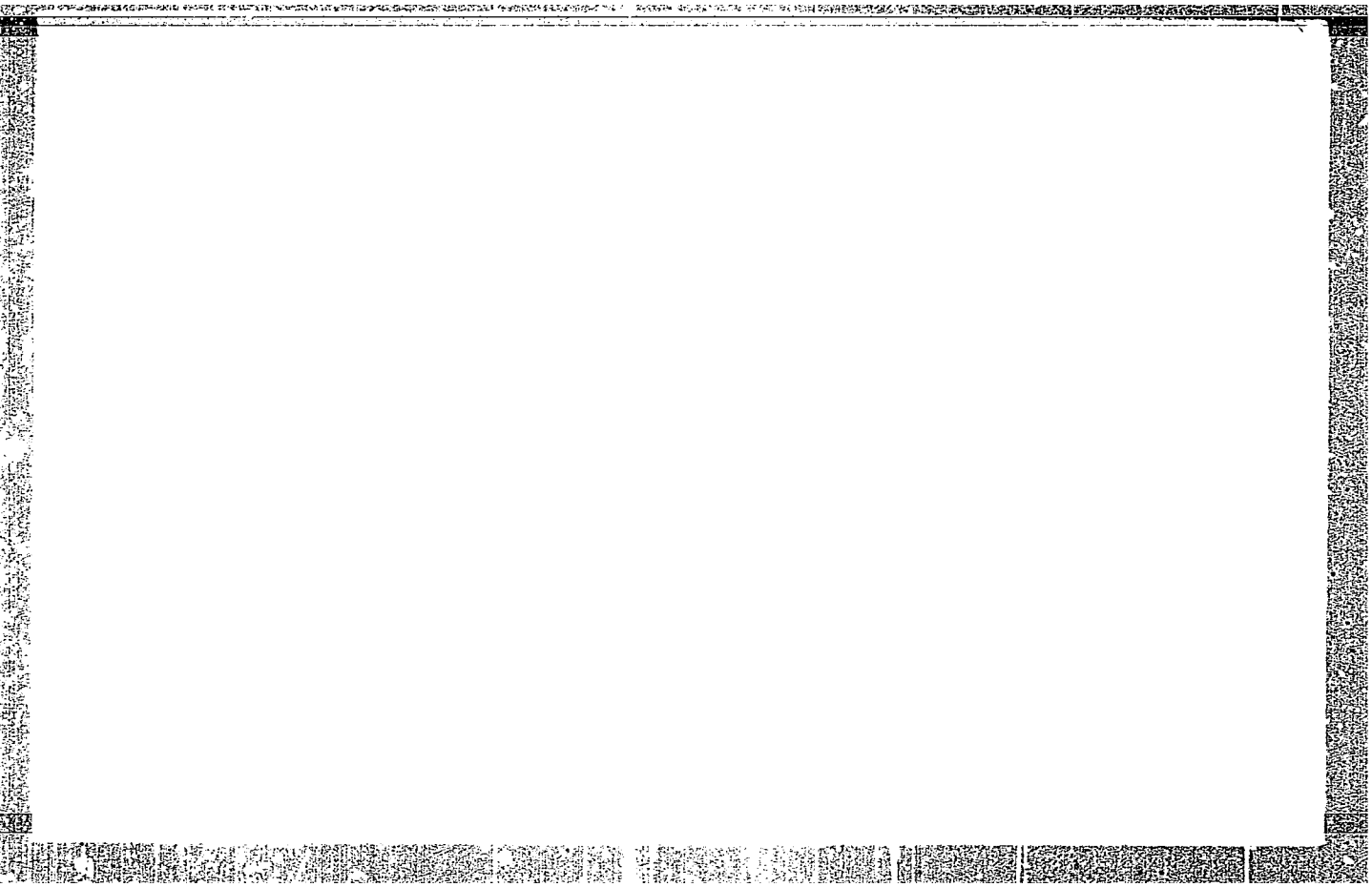
Clathrate compounds of p-cresol with noble gases. Part 1: p-Cresol compound with xenon. Radiokhimiia 7 no.3:288-292 '65. (MIRA 18:7)

TROFIMOV, A.M.; PANKOV, A.M.

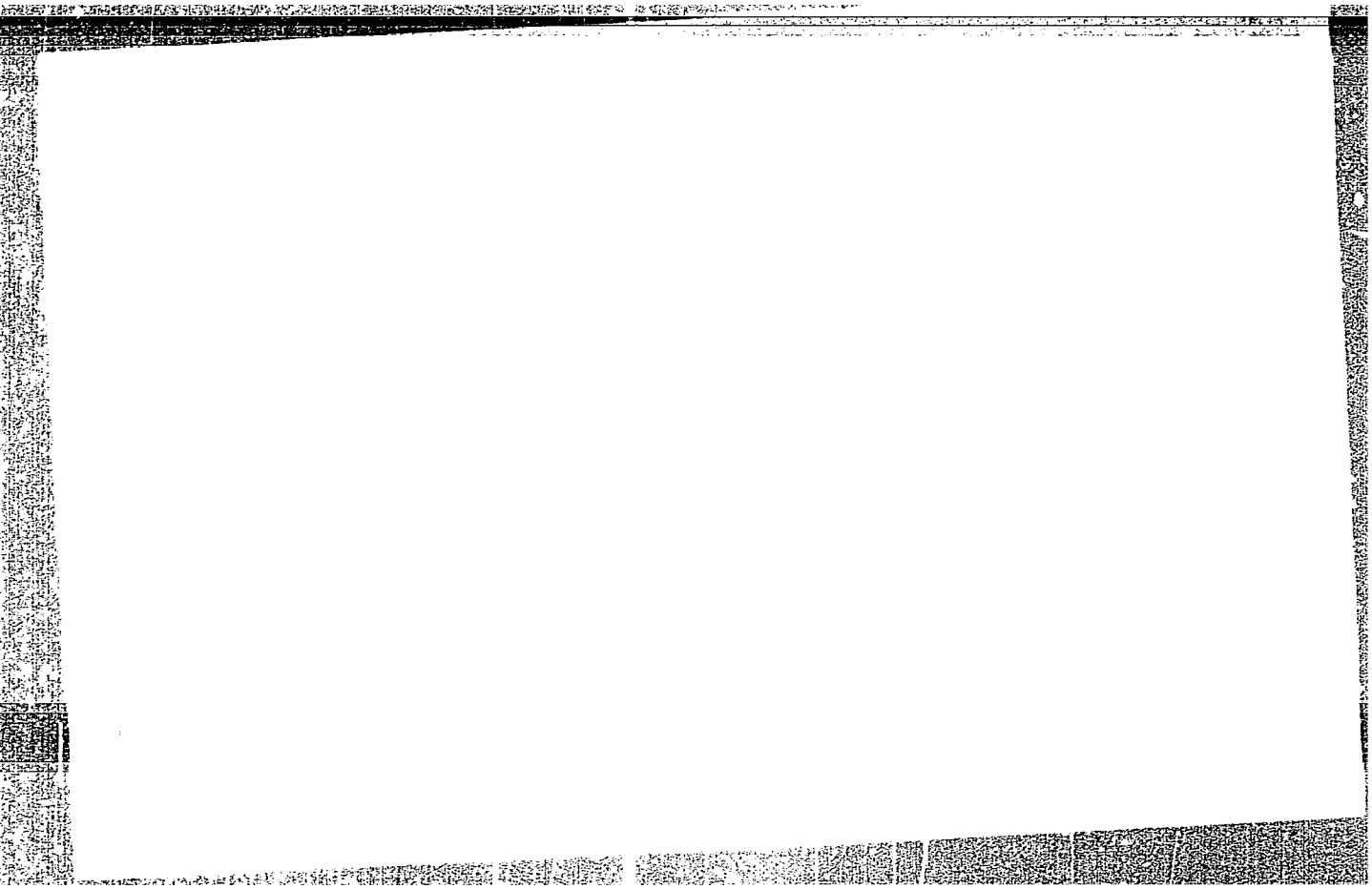
Effect of a macrocomponent gas on the distribution of Kr^{85} and Xe^{133} between the gaseous phase and hydrocarbon sorbent. Radiokhimiia 7 no.3: 293-298 '65. (MIRA 18:7)

TROFIMOV, A.M.; PANKOV, A.M.; KOVARSKIY, A.P.

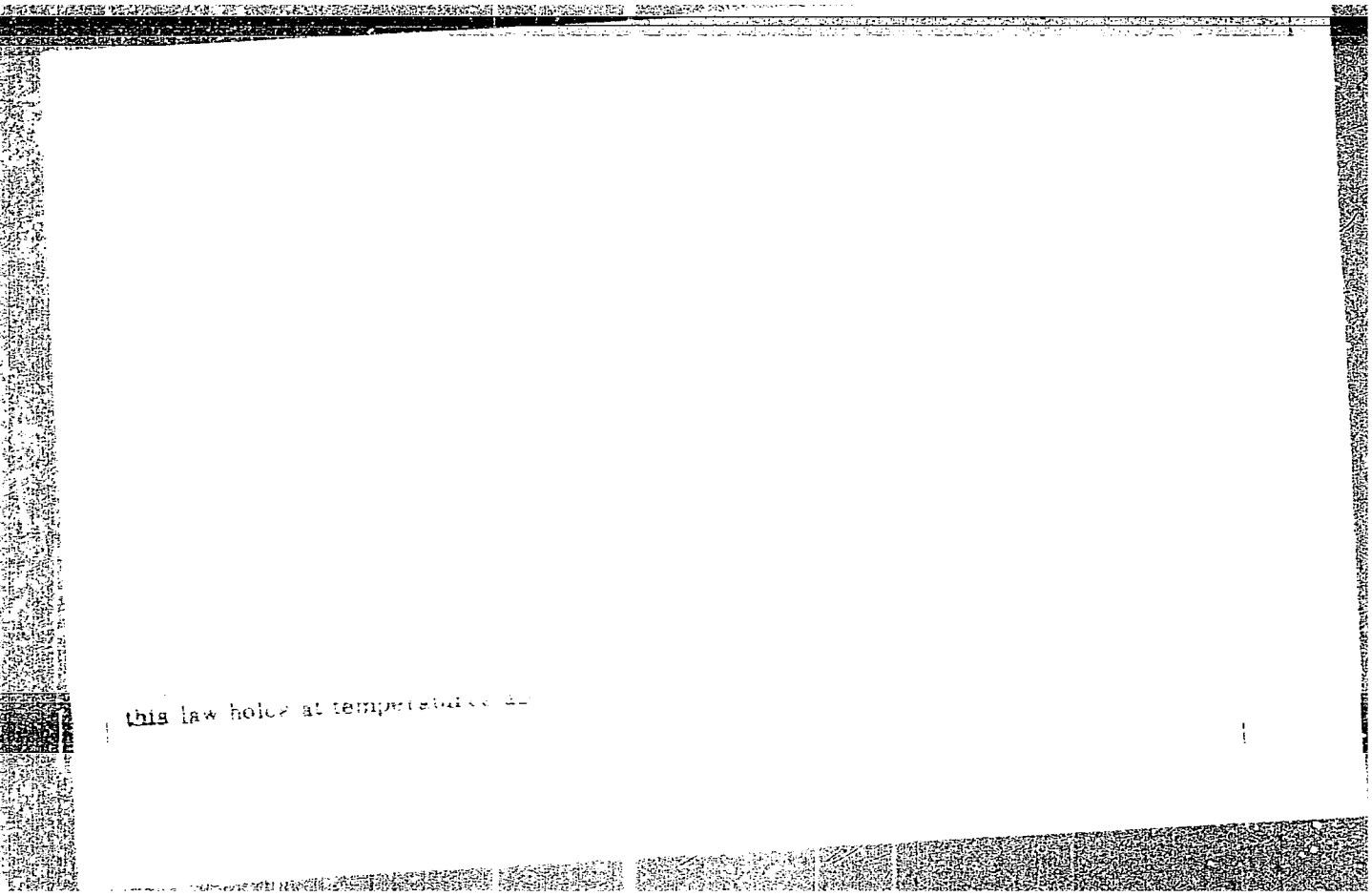
Preparation and study of the stability of polymethyl methacrylate cryptonates. Radiokhimiia 7 no.3:359-361 '65. (MIRA 18:7)

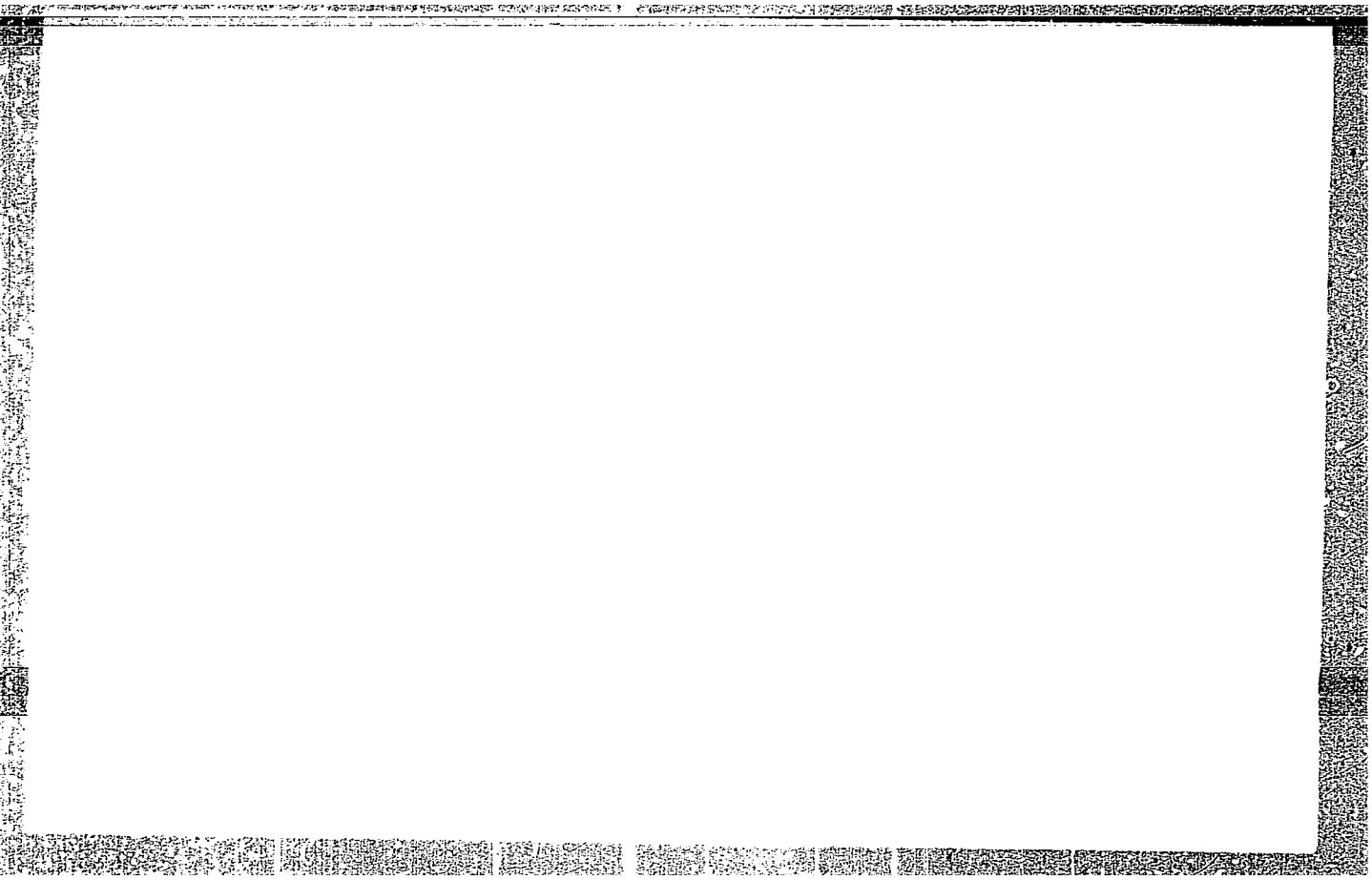


APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756620017-6"

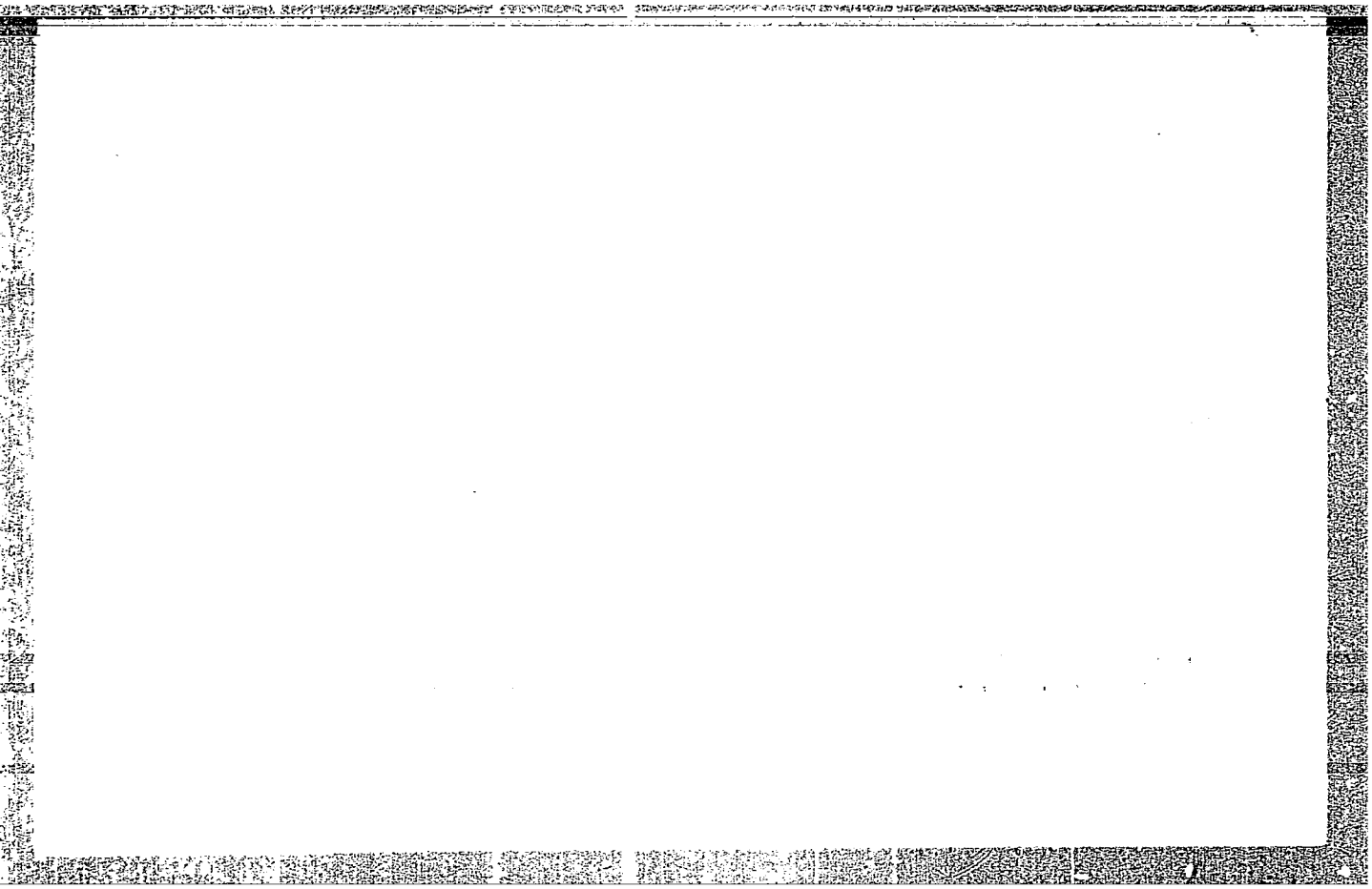


APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756620017-6"

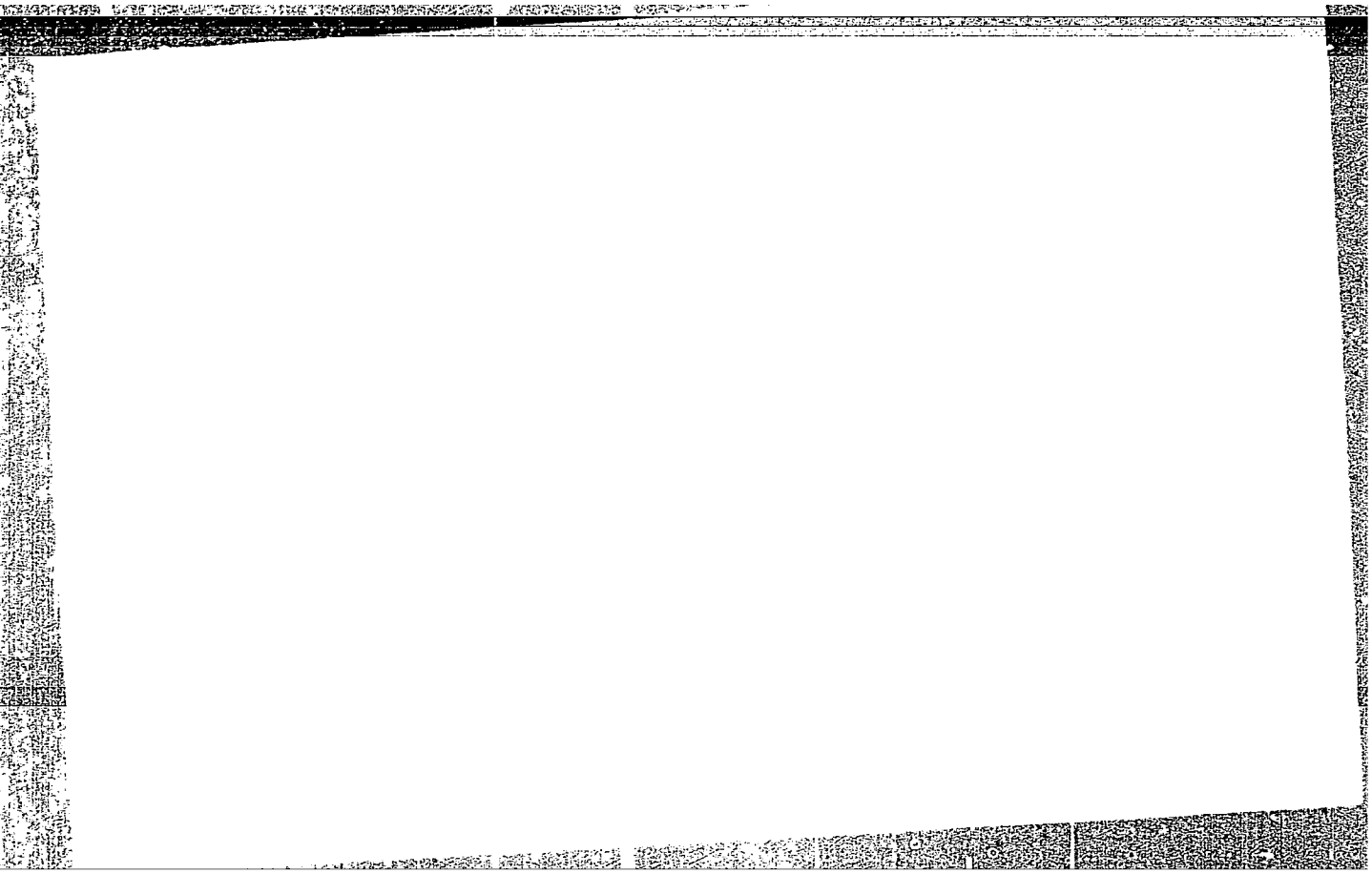




APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756620017-6"



APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756620017-6"



APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756620017-6"

TROFIMOV, Aleksey Mikhaylovich; VLASOV, A.G., inzh., retsenzent; KHAYMOVICH, Ye.M., doktor tekhn. nauk, prof., red.; NIKIFOROVA, R.A., inzh., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Album of machine-tool designs] Al'bom skhem metallorezhushchikh stankov. Moskva, Mashig. Pt.1. [Lathes, drilling and boring machinery] Tokarnye, sverl'nye i rastochnye stanki. 1961. 50 diagrams. ___ [Description] Opisanie. 137 p. (MIRA 15:5)
(Lathes) (Drilling and boring machinery)

TROFIMOV, Aleksey Mikhaylovich; STOLYAR, N.M., inzh., retsenzent; KHAYMOVICH, Ye.M., doktor tekhn. nauk, prof., red.; NIKIFOROVA, R.A., inzh., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Album of diagrams of metal-cutting machines]Al'bom skhem metallorezhushchikh stankov. Moskva, Mashgiz. Pt.2.[Milling, thread-cutting, planing, broach-grinding, dressing, gear-cutting machines and machine-assemblies]Frezernye, rez'bonareznye, strogal'nye, protiazhnye shlifoval'nye, zatochnye, zuboobrabatyvaiushchie, agregatnye stanki. 1962. 69 p. ___ [Description]Opisanie. 252 p. (MIRA 16:1)

(Cutting machines)

NIKOL'SKIY, B.P.; VYSOKOOSTROVSKAYA, N.B.; TROFIMOV, A.M.

Exchange of ions of some alkaline earth metals on carboxylic phosphate, and sulfonic resins. Radiokhimia 4 no.4:512-514 '62. (MIRA 15:11)
(Alkaline earth metals) (Ion exchange resins)

TROFIMOV, A.M.

Improve the quality of switches. Put' i put.khoz. 5 no.6:25 Je '61. (MIRA 14:8)

1. Dorozhnyy master, st.Dno, Oktyabr'skoy dorogi.
(Railroads--Switches)

TROFIMOV, A.M.

Characteristics of the development of slopes. Izv. vys. uchab. zav.; geol. i razv. 6 no.5:35-37 My '65. (MIRA 18:10)

1. Kazanskiy gosudarstvennyy universitet imeni Ul'yanova-Lenina.

STUPISHIN, A.V.; TORSHKOV, N.P.; TROFIMOV, A.M.

A new karst hole. Izv. Vses. Geog. ob-va 97 no.5:461-463 S-O '65. (MIRA 18:11)

YEFREMOV, I.S., doktor tekhn. nauk; REKITAR, R.A., inzh.; ROZENBERG, S.V., kand. ekon. nauk; BLATNOV, M.D., kand. tekhn. nauk; VIL'KONETSKIY, M.S., inzh.; TOMILIN, A.I., inzh.; POPELYASH, V.N., inzh.; ZAGAYNOV, N.A., kand. tekhn. nauk; FINKEL'SHTEYN, B.S., inzh.; MARINOV, I.A., inzh.; ISTRATOV, V.P., inzh.; MARGOLIN, I.S., inzh.; ENGEL'S, G.G., inzh.; ANTONOV, V.A., inzh.; SOKOLOV, V.D., inzh.; KLESHCHINSKIY, B.K., inzh.; IL'INSKIY, A.I., retsenzent; PAPKOV, N.G., retsenzent; SMIRNOV, G.M., retsenzent; SHPOLYANSKIY, M.N., otv. red. toma; VOLOCHNEV, V.N., red.; TROFIMOV, A.N., red.; RACHEVSKAYA, M.I., red. izd-va; LELYUKHIN, A.A., tekhn. red.

[Technical manual on city electric transportation in three volumes] Tekhnicheskii spravochnik po gorodskomu elektro-transportu v trekh tomakh. Redkollegiia: V.N.Volochnev, A.N. Trofimov, M.N.Shpolianskii. Moskva, Izd-vo M-va kommun. khoz. RSFSR. Vol.1. [City electric transportation (general part)] Gorodskoi elektricheskii transport (obshchaia chast'). Otv. red. toma M.N.Shpolianskii. 1961. 726 p. (MIRA 15:4)
(Streetcars) (Trolley buses)

TROFIMOV, A.N.

Current distribution on the cathode during electrodeposition of metals in the ultrasonic field. Elektrokhimiia 1 no.9:1150-1152 S '65. (MIRA 18:10)

1. Bashkirskiy gosudarstvennyy universitet imeni 40-letiya Oktyabrya.

TROFIMOV, A.N.; IVANOV, V.[illegible].

Calculation of the current distribution on a cathode by the method of straight lines. Elektrokhimiia 1 no.2:244-[illegible] F '65. (MIRA 18:6)

1. Bashkirskiy gosudarstvennyy universitet imeni 40-letiya Oktyabrya.

IVIN, Kirill Vladimirovich; TROFIMOV Aleksandr Nazarovich, ENGEL'S, Georgiy Georgiyevich; KRYLOV, S.K., redaktor; OTOCHEVA, M.A., redaktor izdatel'stva; FOMBERG, P.I., tekhnicheskiy redaktor

[Trolley buse collectors] Tokos"em trolleibusa. Moskva, Izd-vo Ministerstva kommunal'nogo khoziaistva RSFSR, 1956. 191 p. (MLRA 9:7)
(Trolley buses)
(Electric current collectors)

1.1800 1087, 2808, 2208, 2607

25258
S/194/61/000/001/025/038
D216/D304

AUTHOR: Trofimov, A.N.

TITLE: Distribution of metal at the cathode surface during electro deposition in an ultra-sonic field

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 1, 1961, 18, abstract 1 E153 (V Sb. Primeneniye ul'traakust. k issled. veshchestva, no. 10, M., 1960, 103-107)

TEXT: The results are given for the experimental analysis of metal distribution at the cathode surface during electro-deposition of copper, zinc and nickel in an ultrasonic field and also on the influence of the ultrasonics on the cathode polarization and on metal output as a function of current. It is shown that changes in the dispersing ability of baths correspond exactly to changes in the slope of the polarization curve and metal output under the influence of an ultrasonic frequency of 30 Kc/s and at field inten-

Card 1/2

Distribution of metal...

sities of 0.15 and 0.3 W/cm^2. It is explained that with the increase of ultrasonic intensity, the irregularity of the copper distribution at the cathode surface increases. It has been noticed that a low frequency ultrasound has very much the same effect on dispersing properties of the bath as stirring. 3 references.

Card 2/2

SOV/105-59-12-21/23

8(0)
AUTHORS: Chilikin, M. G., Tikhomirov, S. S., Trofimov, A. N., Ivanov, I.T., Rozenfel'd, V. Ye., Minov, D. K., Medel', V. B.

TITLE: Professor I. S. Yefremov, On His 50th Birthday

PERIODICAL: Elektrichestvo, 1959, Nr 12, p 83 (USSR)

ABSTRACT: Ivan Semenovich Yefremov was born in July 1909. In 1935 he graduated from the fakul'tet elektrifikatsii (Department of Electrification) of the Moskovskiy elektromekhanicheskiy institut inzhenerov zheleznodorozhnogo transporta (Moscow Electromechanical Institute for Railroad Engineers). He is working since then at the Trolley Administration of Moscow, where he became plant manager, after being foreman and chief engineer. He takes part in the scientific work of the research laboratory of the gorodskoy elektricheskiy transport Akademii kommunal'nogo khozyaystva (Municipal Electrical Transportation of the Academy of Communal Economy). In 1946 he graduated as Candidate of Technical Sciences, in 1949 he was elected the chief of the kafedra elektricheskoy tyagi i podvizhnogo sostava Moskovskogo avtodorozhnogo instituta (Chair of Electrical Traction and Vehicles of the Moscow Institute of Highways).

Card 1/2

Professor I. S. Yefremov. On His 50th Birthday SOV/105-59-12-21/23

In March 1956 he became head of the kafedra elektricheskogo transporta of the Moskovskiy energeticheskiy institut (Chair of Electrical Transportation of the Moscow Institute of Power Engineering). He still holds this position. In April 1959 he became dean of the fakul'tet elektrifikatsii promyshlennosti i transporta MEI (Department of Electrification of the Industry and Transportation at the Moscow Institute of Power Engineering). In 1954 he graduated as Doctor of Technical Sciences and became Professor. Since 5 years he is a member of the ekspertnaya komissiya VAK (Expert Commission of the VAK) and the Nauchno-tekhnicheskiy sovet Ministerstva kommunal'nogo khozyaystva RSFSR (Scientific-technical Council at the Ministry for Communal Economy of the RSFSR). He has the order "Patriotic War 1st Class" and several other medals. There is 1 figure.

Card 2/2

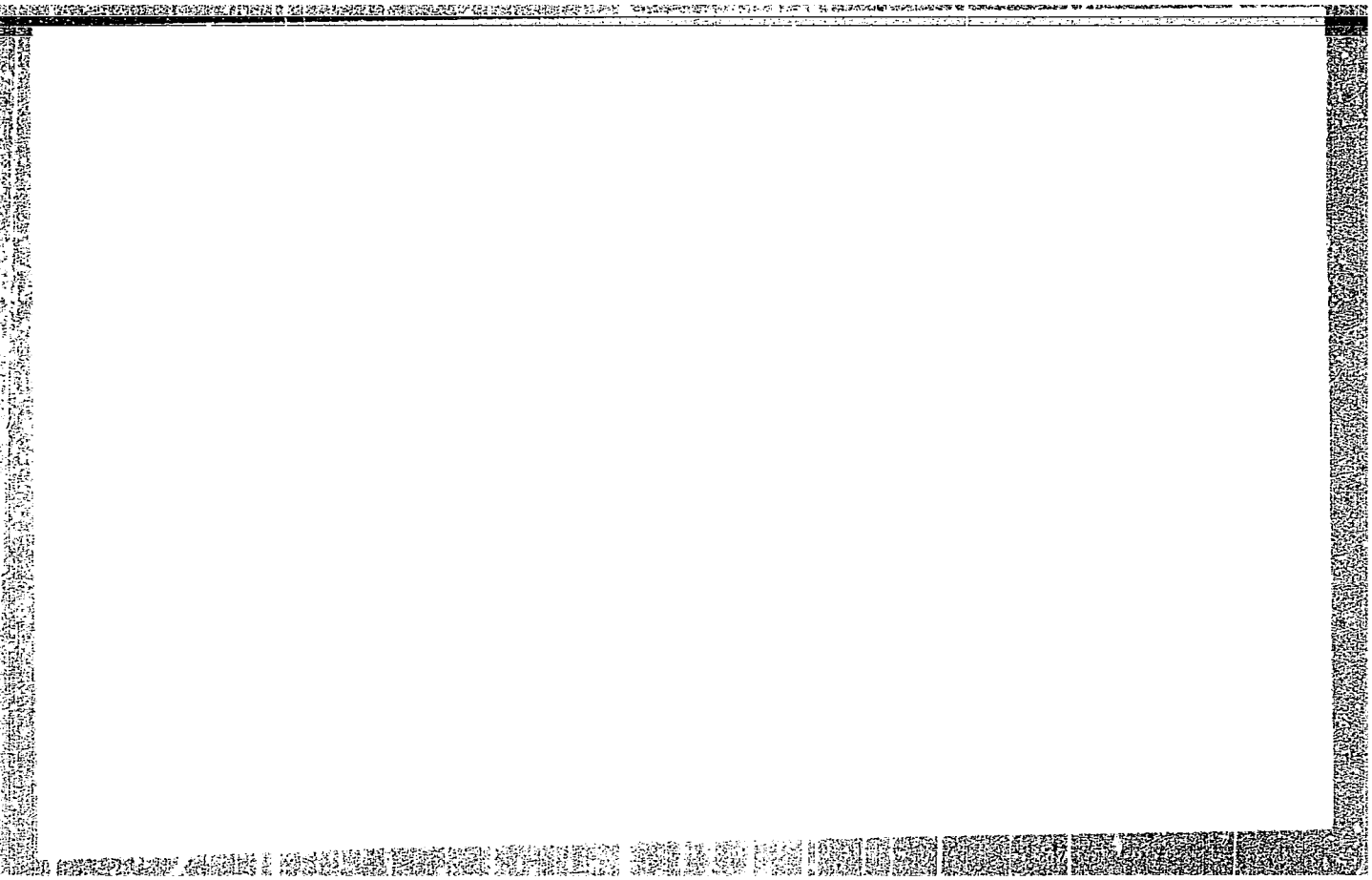
IVIN, Kirill Vladimirovich; TROFIMOV, Aleksandr Nazarovich; ENGEL'S, Georgiy Georgiyevich

[Pantographs of municipal surface transportation] Tokos"em gorodskogo nazemnogo transporta. Moskva, Stroizdat, 1965. 261 p. (MIRA 18:7)

TROFIMOV, A.N.; GALUSHKO, A.P.

Cathodic polarization in the electrodeposition of metals in the Ultrasonic field. Elektrokhimiia 1 no.8:985-988 Ag '65. (MIRA 18:9)

1. Bashkirskiy gosudarstvennyy universitet imeni 40-letiya Oktyabrya.



APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756620017-6"

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756620017-6"

TROFIMOV, A.N.

PHASE I BOOK EXPLOITATION SOV/5644

Vsesoyuzhskaya konferentsiya professorov i prepodavateley pedagogicheskikh institutov

Primeneniye ul' traakustiki k issledovaniyu veshchestva. vyp. 10. (Utilization of Ultrasonics for the Investigation of Materials. no. 10) Moscow, Izd-vo MOPI, 1960. 321 p. 1000 copies printed.

Eds.: V. F. Nozdrev, Professor, and B. B. Kudryavtsev, Professor.

PURPOSE: This book is intended for physicists and engineers interested in ultrasonic engineering.

COVERAGE: The collection of articles reviews present-day research in the application of ultrasound in medicine, chemistry, physics, metallurgy, ceramics, petroleum and mining engineering, defectoscopy, and other fields. No personalities are mentioned. References accompany individual articles.

Card 1/10

TROFIMOV, A.N.

Municipal public transportation systems without conductors. Gor. khoz. Mosk. 34 no.10:18-20 O '60. (MIRA 13:10)

1. Nachal'nik Upravleniya passazhirskogo transporta Mosgorispolkoma.
(Moscow--Transit systems)

S/194/62/000/006/130/232
D256/D308

1.1800

AUTHOR: Trofimov, A.N.

TITLE: Electrolytic deposition of metals in ultrasonic fields

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 6, 1962, abstract 6-5-43 sh (V sb. Primeneniye ul'traakust.k issled. veshchestva, no. 12, M., 1960, 113-119)

TEXT: In the electrolytic deposition of metals several factors reduce the speed of the process. Each electrolyte has a max. cathode current density which should not be exceeded. The effect of ultrasound on the process of electrolytic deposition was investigated experimentally using a frequency of 27 kc/s at various intensities from 0.02 to 10 W/cm2. Ultrasound of an intensity within the range 0.6 to 1 W/cm2 was found to be most effective in intensifying the electrolytic coating; the use of intensities higher than 1 W/cm2 often resulted in a reduced thickness of the deposit due to dispersion. Ultrasound increases current yield and increases the quantity

Card 1/2

Electrolytic deposition of metals ... S/194/62/000/006/130/232
D256/D308

of the deposited metal; the deposit is found to be almost completely free of pores and the process of electrolytic deposition is accelerated. 1 figure, 3 tables, 16 references. [Abstracter's note: Complete translation.]

Card 2/2

TROFIMOV, A.N.

Urban passenger transportation. Gor.khoz.Mosk. 35 no.9:35-38 S '61. (MIRA 14:10)

1. Nachal'nik Upravleniya passazhirskogo transporta Ispolkoma Mossoveta.

(Moscow---Transit systems)

TROFIMOV, A.N.

Organizational and technical measures and profitableness of street-car and trolley bus passenger transport in Moscow. Gor. khoz. Mosk. 31 no.2:14-18 F '57. (MLRA 10:4)

1. Nachal'nik Tramvayno-trolleybusnogo upravleniya Mosgorispolkoma.
(Moscow--Street railways--Cost of operation)
(Moscow--Trolley buses--Cost of operation)

TROFIMOV, A.N.

Improvement of the contact network and collectors of Moscow trolley buses. Gor.khoz.Mosk. 24 no.4:23-31 Ap '50. (MLRA 7:10)

1. Nachal'nik Upravleniya trolleybusnogo transporta Moskvy.
(Moscow--Trolley buses) (Trolley buses--Moscow)

TROFIMOV, A.N.

Twenty years of motorbus transport service. Gor.khoz.Mosk. 28 no.2: 11-13 F '54. (MLRA 7:5)

1. Nachal'nik Upravleniya trolleybusnogo transporta Ispolkoma Mossoveta. (Moscow--Trolley buses) (Trolley buses--Moscow)

TROFIMOV,A.N., inzhener; ENGEL'S,G.G., inzhener; IVIN,K.V., inzhener

Experience in using elastic contact systems for the trolley bus lines in Budapest. Gor.khoz.29 no.9:29-33 S'55. (MLRA 8:12)
(Budapest--Trolley buses)

TROFIMOV, A.N.

Effort to increase the profitableness of the Moscow trolley bus system. Gor. khoz.Mosk. 25 no.7:33-34 Jl '51. (MLRA 6:11)

1. Nachal'nik Upravleniya trolleybusnogo transporta g. Moskvy.
(Moscow--Trolley buses) (Trolley buses--Moscow)

76-32-5-39/47

AUTHOR: Trofimov, A. N.

TITLE: The Distribution of Metal on the Cathode Surface in the Electric Deposition of Copper in the Ultrasonic Field (Raspredeleniye metalla na poverkhnosti katoda pri elektroosazhdenii medi v ul'trazvukovom pole)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 5, pp.1172-1174 (USSR)

ABSTRACT: In order to clear the existing contradictions in investigations of the above mentioned theme the present work determines the metal distribution on the electrode in copper depositions of pyrophosphoric and sulfuric acid electrolytes in the ultrasonic field. The method of the selective cylindrical cathode was used, a generator with a magnetostriction transformer to the frequency of 30 kilocycles serving as source of ultrasound. The experiments were carried out in three different troughs, the composition of the contents of which is given. From the results can be seen that the homogeneity of the metal distribution is deteriorated by ultrasound, especially in the troughs of pyrophosphoric acid at a mean increase of the

The Distribution of Metal on the Cathode Surface in the Electric Deposition of Copper in the Ultrasonic Field

current density and amplification of the ultrasound intensity. Based on the investigation of the polarization curves as well as of the metal yield in dependence on the current it was found that the copper distribution on the cathode is deteriorated in the ultrasonic field, which fact was observed with all electrolytes. Therefore the deteriorating effect on the metal distribution must be taken into account in using ultrasound for the improvement of the quality of the copper depositions and for an increase of the productivity of the trough. Finally the author thanks Professor A. P. Kapustin and Professor A. T. Vagramyan. There are 3 figures and 3 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut im. V. I. Lenina (Moscow State Pedagogical Institute imeni V. I. Lenin)

SUBMITTED: July 4, 1957

1. Copper--Electrodeposition 2. Electrolysis--Ultrasonic factors

36454
S/137/62/000/003/152/191
A052/A101

1.1800

AUTHOR: Trofimov, A. N.

TITLE: Electrodeposition of metals in ultrasonic field

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 86, abstract 3I559 (V sb. "Primeneniye ul'traakust. k issled. veshchestva". Moscow, no. 12, 1960, 113-119)

TEXT: The effect of ultrasound on the process of electrodeposition of metals was studied, in particular, the effect of ultrasound on the metal distribution on cathodesof a complex form, on the hardness of electrolytic deposits, on the porosity of platings, on the electric conductivity of electrolytes. Depending on geometric parameters of the cathode the effect of ultrasound on the process of electrolysis may either improve or impair the uniformity of the metal distribution on the electrode; the degree to which ultrasound affects the uniformity of platings depends on the nature of polarization. Ultrasound causes a considerable reduction of the hardness of Ni-deposits and has no noticeable effect on the hardness of Cu-deposits under adopted conditions of electrolysis. The decrease of microhardness is connected obviously with the decrease of the amount of H_2

Card 1/2

Electrodeposition of metals in ultrasonic field

included in the Ni-deposit, since metallographic studies have detected only a decrease of the grain size of both Cu- and Ni-deposits. The application of ultrasound in the process of electrolysis causes a considerable decrease of the porosity of the deposit, and applied to the Ni-plating it eliminates completely the pitting formation. The attempt to establish the effect of ultrasound on the electric conductivity of a number of electrolytes used has failed. There are 16 references.

V. Tarisova

[Abstracter's note: Complete translation]

Card 2/2

TROFIMOV, A.N., inzh.

Current collector of a trolley bus. Vest. elektroprom. 33 no.10:43-47 O '62. (MIRA 15:9)
(Trolley buses) (Electric contactors)

IVIN, K.V.; MOLODYKH, I.A.; YERMAKOV, N.D.[deceased]; MARKOVNIKOV, V.L., doktor tekhn. nauk; VATSURO, M.A. [deceased]; KRUGLOVA, L.P.; STRAKHOV, K.I.; DUL'KIN, I.A.; FAYN, A.G.; RUBINSKIY, N.V.; SPISKOV, V.S.; PERKIS, D.I., kand. tekhn. nauk; LUCHAY, G.A., retsenzent; TROFIMOV, A.N., otv. red. toma; VOLOCHNEV, V.N., red.; SHPOLYANSKIY, M.N., red.; OTOCHEVA, M.A., red.izd-va; LELYUKHIN, A.A., tekhn. red.

[Technical handbook on electric city transportation in three volumes] Tekhnicheskii spravochnik po gorodskomu elektrotransportu v trekh tomakh. Redkoll.: V.N.Volochnev, A.N.Trofimov, M.N.Shpolianskii. Moskva, Izd-vo M-va Kommun.khoz.RSFSR. Vol.3. [Trolley buses] Trolleibus. 1963. 722 p. (Trolley buses) (MIRA 16:10)

L 26161-66 EWP(h)/EWT(d)/EWP(l)
ACC NR: AP6006350 (A) SOURCE CODE: UR/0413/66/000/002/0084/0084

AUTHORS: Reznik, A. P.; Lobov, A. G.; Auerbakh, V. M.; Trofimov, A. P.; Yashin, K. A.; Vasil'chenko, N. M.

20
B

ORG: none

TITLE: A means of mounting upper sections of crane masts with the boom. Class 35, No. 178071

14

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 84

TOPIC TAGS: crane, construction equipment

ABSTRACT: This Author Certificate describes the mounting of upper sections of crane masts with the boom. The upper sections are set by means of crane mechanisms which are on the lower section of the mast which is on a rotating platform. The leading end of the boom and the base of the supporting part of the mast are joined by a cable which, in turn, is fastened to the edge of the platform. Thus the elevation of the upper sections of the mast is secured by the boom through their turning relative to the place where the truss joins the platform (see Fig. 1).

UDC: 621.873.25.002.72

Card 1/2

L 26161-66
ACC NR: AP6006350

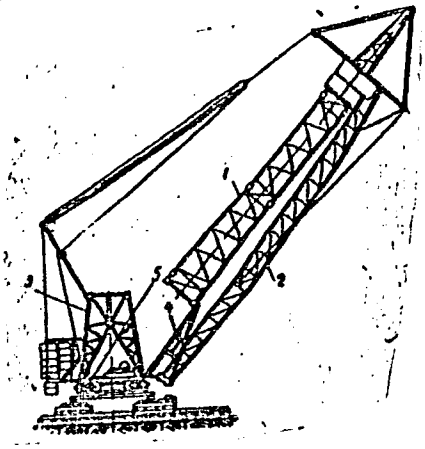


Fig. 1. 1 - upper sections of the mast; 2 - boom; 3 - lower section of the mast; 4 - truss; 5 - rotating crane platform.

Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 18Oct63

Card 2/2 CC

TROFIMOV, A.S.; POLYAKOV, V.M.

New method of removing used sand in foundries. Lit. proizv. no.1:14-16 Ja '58. (MIRA 11:2)

(Sand, Foundry)

TROFIMOV, A.S.

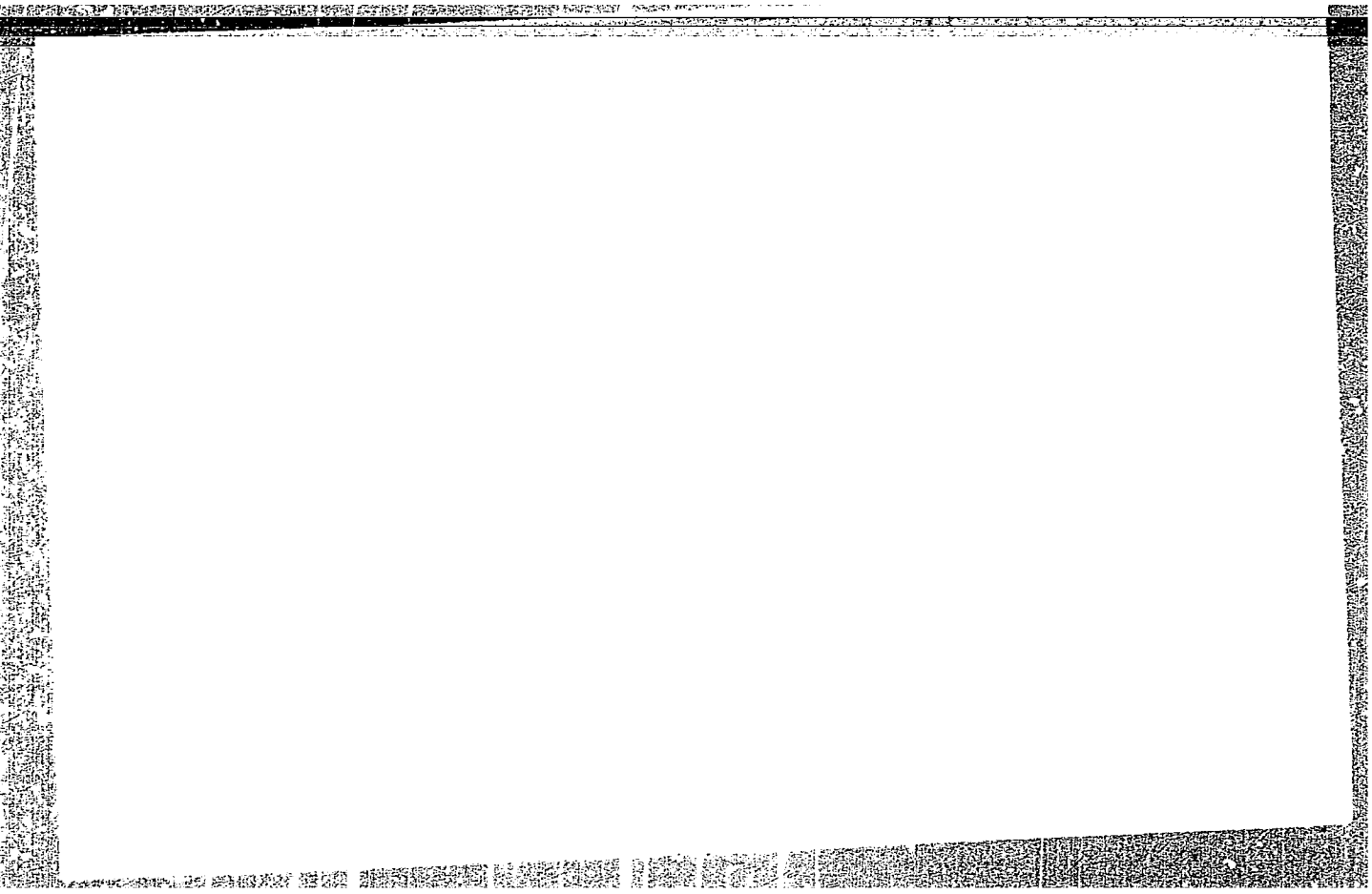
Thermal conductivity of a hollow cylinder and a plate with harmonic temperature oscillations. Inzh.fiz.zhur. 4 no.7:79-83 Jl '61. (MIRA 14:8)

(Heat—Transmission)

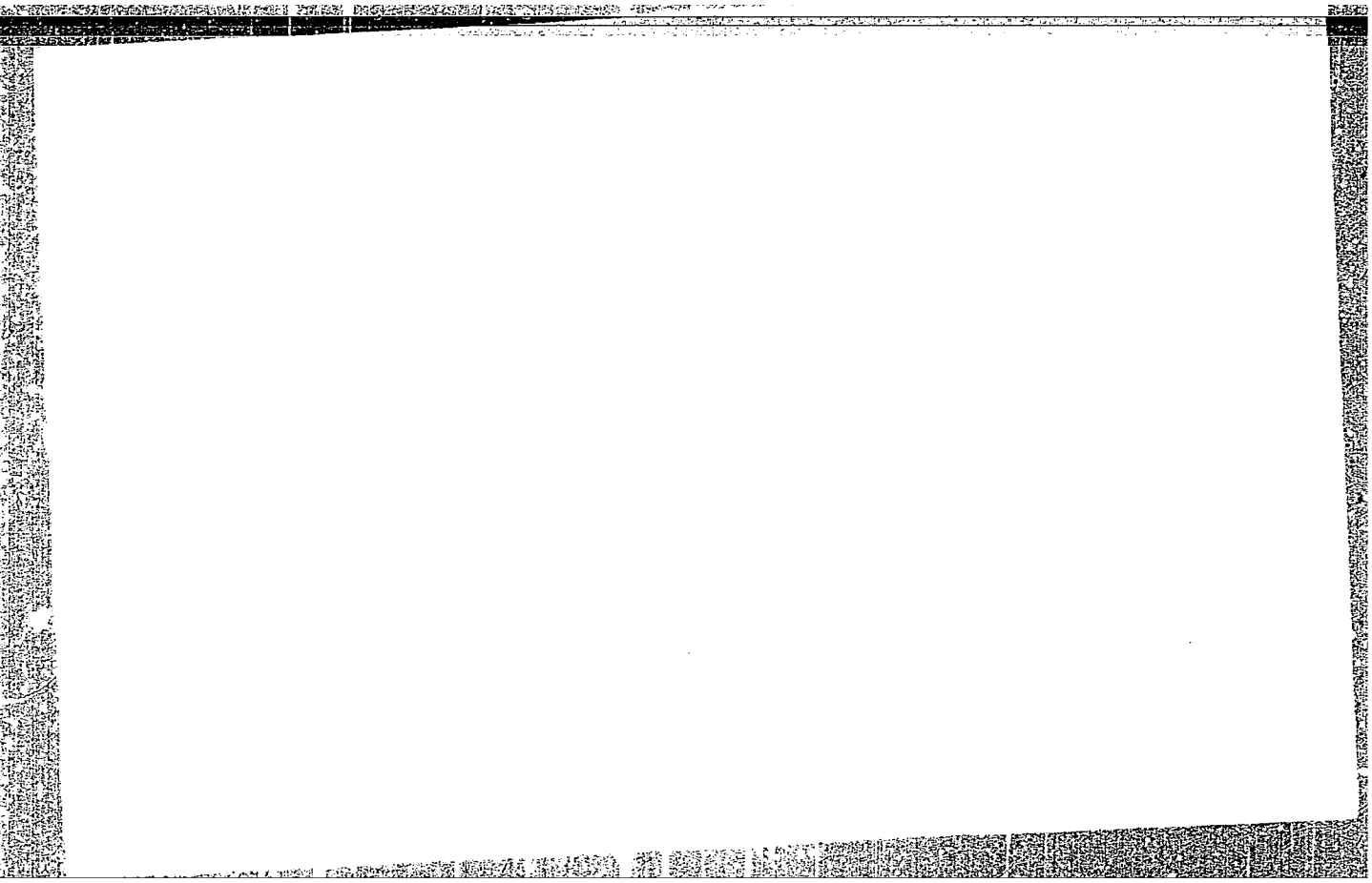
TROFIMOV, A.S.

Permissible temperature change velocities in a coolant. Inzh.-fiz. zhur. no.11:28-31 N '64. (MIRA 18:2)

1. Fiziko-energeticheskiy institut, g. Obninsk.



APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756620017-6"



APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756620017-6"

KURBATOV, I.M.; LEONCHUK, M.P.; TROFIMOV, A.S.

Optimum control of thermal processes in a nuclear reactor.
Atom. energ. 19 no.6:537-540 D '65. (MIRA 19:1)

LEONCHUK, M.P. (Moskva); TROFIMOV, A.S. (Moskva); KURBATOV, I.M. (Moskva)

Numerical solution of a problem concerning optimum control of a nuclear reactor. Zhur. vych. mat. i mat. fiz. 5 no.3:558-561 My-Je '65. (MIRA 18:7)

S/170/62/005/004/010/016
B102/B104

26 2230

AUTHOR: Trofimov, A. S.

TITLE: Thermal conductivity of multilayer fuel elements

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 5, no. 4, 1962, 93 - 96

TEXT: A relatively simple approximate method is proposed for calculating the temperature distribution in fuel elements for quasisteady processes. A fuel rod consisting of three layers with $R_1 > R_2 > R$ is considered. For $r < R$ the heat release is assumed to be uniform. The temperatures

$$T(\rho, \tau) = T_c(\tau) + (A - \rho^n)\varphi(\tau), \quad 0 \leq \rho \leq 1;$$
$$T_2(\rho, \tau) = T_c(\tau) + (B - D\rho^m)\varphi(\tau), \quad 1 \leq \rho \leq R_2/R; \qquad (1)$$
$$T_1(\rho, \tau) = T_c(\tau) + (M - N\rho^k)\varphi(\tau), \quad \frac{R_2}{R} \leq \rho \leq R_1/R,$$

with

Card 1/3

Thermal conductivity of...

$$A=\frac{\lambda}{\lambda_1}\frac{n}{k}\left(\frac{R_2}{R}\right)^m\left[\frac{\lambda_1}{\lambda_2}\frac{k}{m}-1+\left(\frac{R_1}{R_2}\right)^k\left(1+k\frac{\lambda_1}{\alpha R_1}\right)\right]-$$
$$-\left(\frac{\lambda}{\lambda_2}\frac{n}{m}-1\right),$$
$$B=\frac{\lambda}{\lambda_1}\frac{n}{k}\left(\frac{R_2}{R}\right)^m\left[\frac{\lambda_1}{\lambda_2}\frac{k}{m}-1+\left(\frac{R_1}{R_2}\right)^k\left(1+k\frac{\lambda_1}{\alpha R_1}\right)\right], \quad (3)$$
$$D=\frac{\lambda}{\lambda_2}\frac{n}{m},$$
$$M=\frac{\lambda}{\lambda_1}\frac{n}{k}\left(\frac{R_2}{R}\right)^m\left(\frac{R_1}{R_2}\right)^k\left(1+k\frac{\lambda_1}{\alpha R_1}\right),$$
$$N=\frac{\lambda}{\lambda_1}\frac{n}{k}\left(\frac{R_2}{R}\right)^{m-k}.$$

are to be determined; $\rho = r/R$ and $T_c(\tau)$ is the coolant temperature. For $\psi(\tau)$, the equation $d\psi/d\tau + \beta\psi(\tau) = \delta q(\tau) - \xi\, dT_c(\tau)/d\tau$ is obtained, where

Thermal conductivity of...

$q(\tau)$ is the dimensionless heat release. The solution is

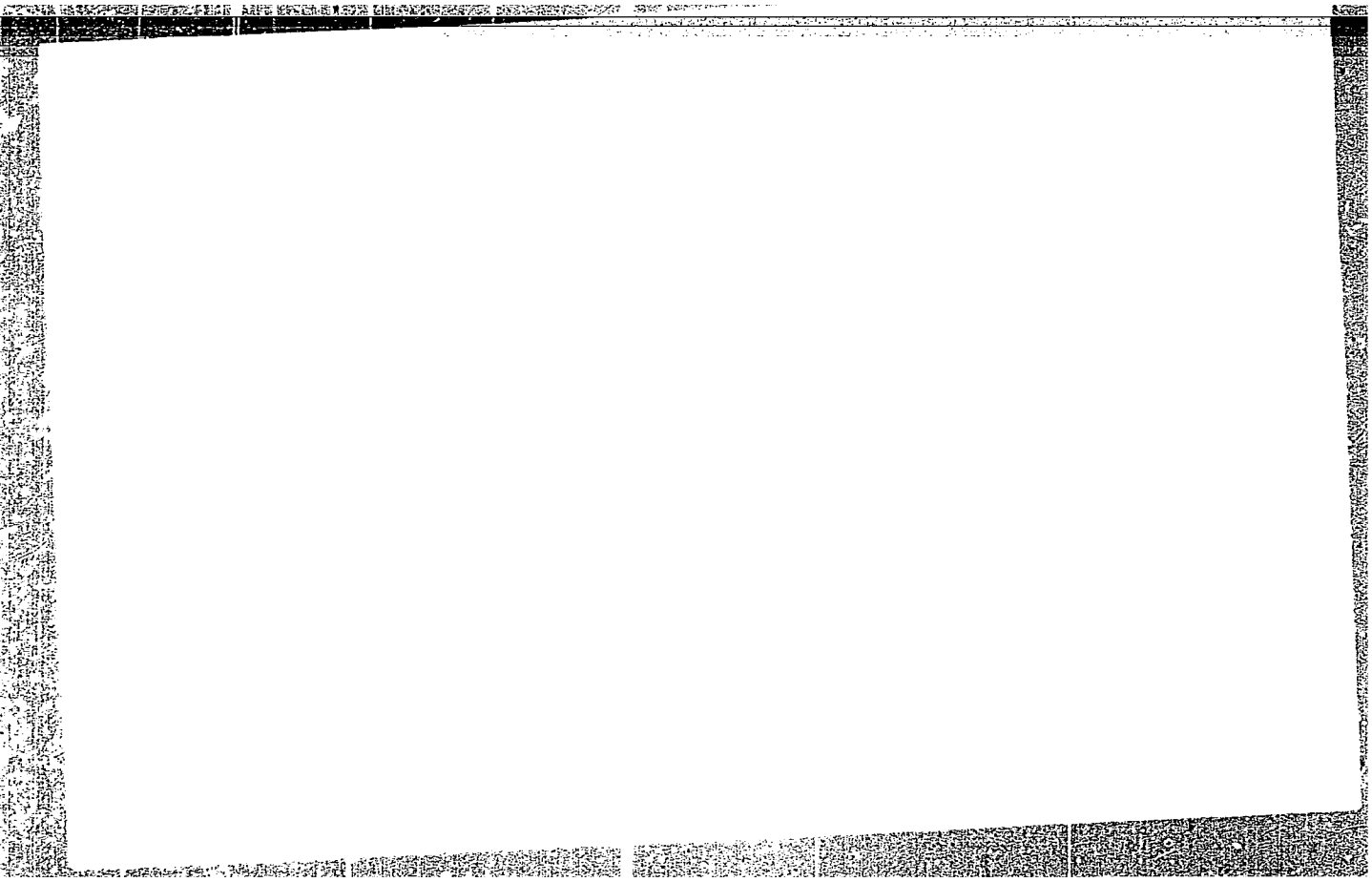
$$\varphi(\tau) = \delta \int_0^\tau q(\tau') e^{-\beta(\tau-\tau')} d\tau' - \xi \int_0^\tau \frac{dT_c(\tau')}{d\tau'} \times \qquad (6).$$

$$\times e^{-\beta(\tau-\tau')} d\tau' + \varphi_0 e^{-\beta\tau},$$

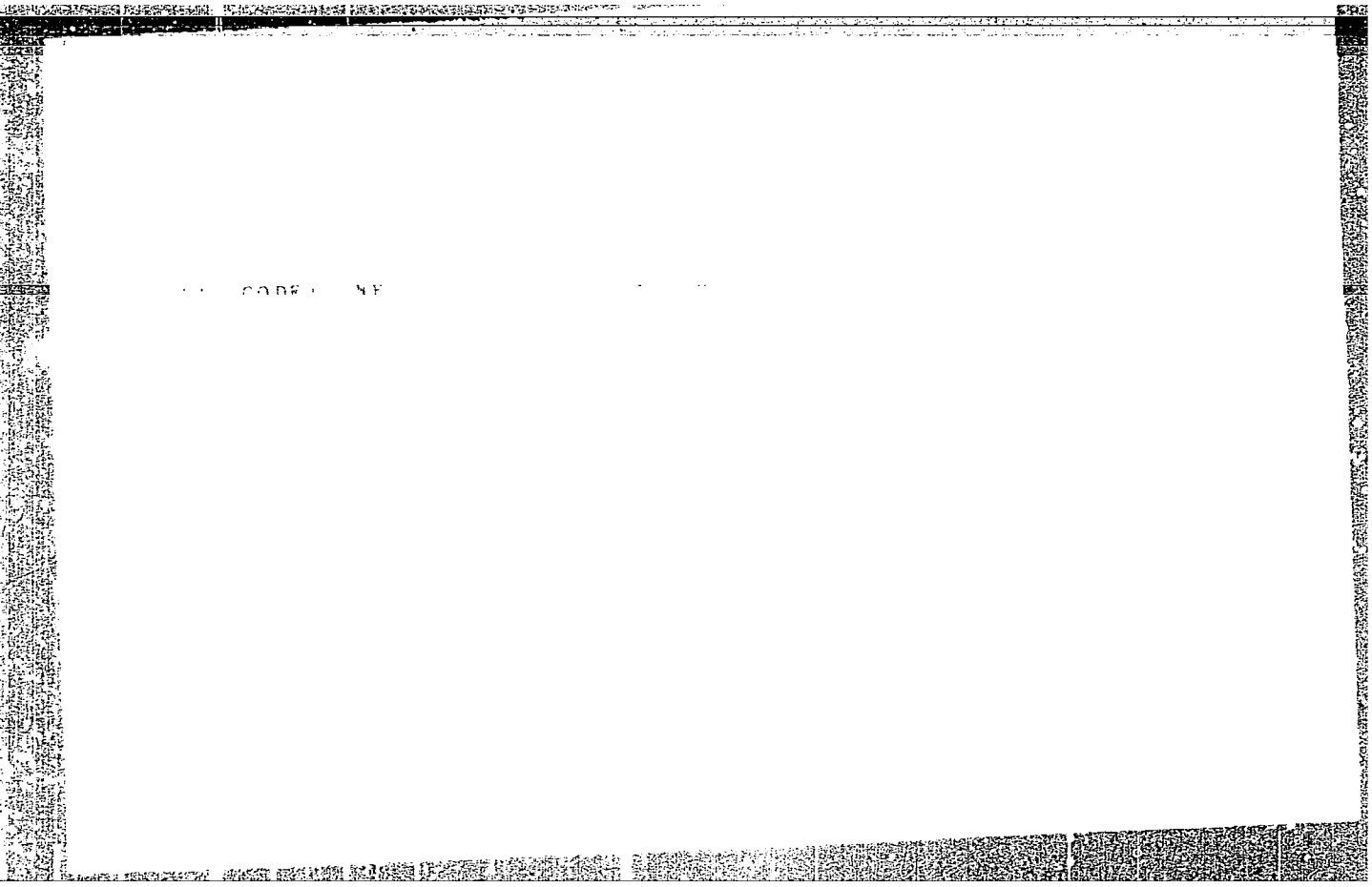
The formulas obtained are used to calculate a numerical example for a double-layer fuel rod. The results are in satisfactory agreement with data obtained from exact calculations, except for short periods ($\tau \lesssim 0.05$ sec). There are 1 table and 1 Soviet reference..

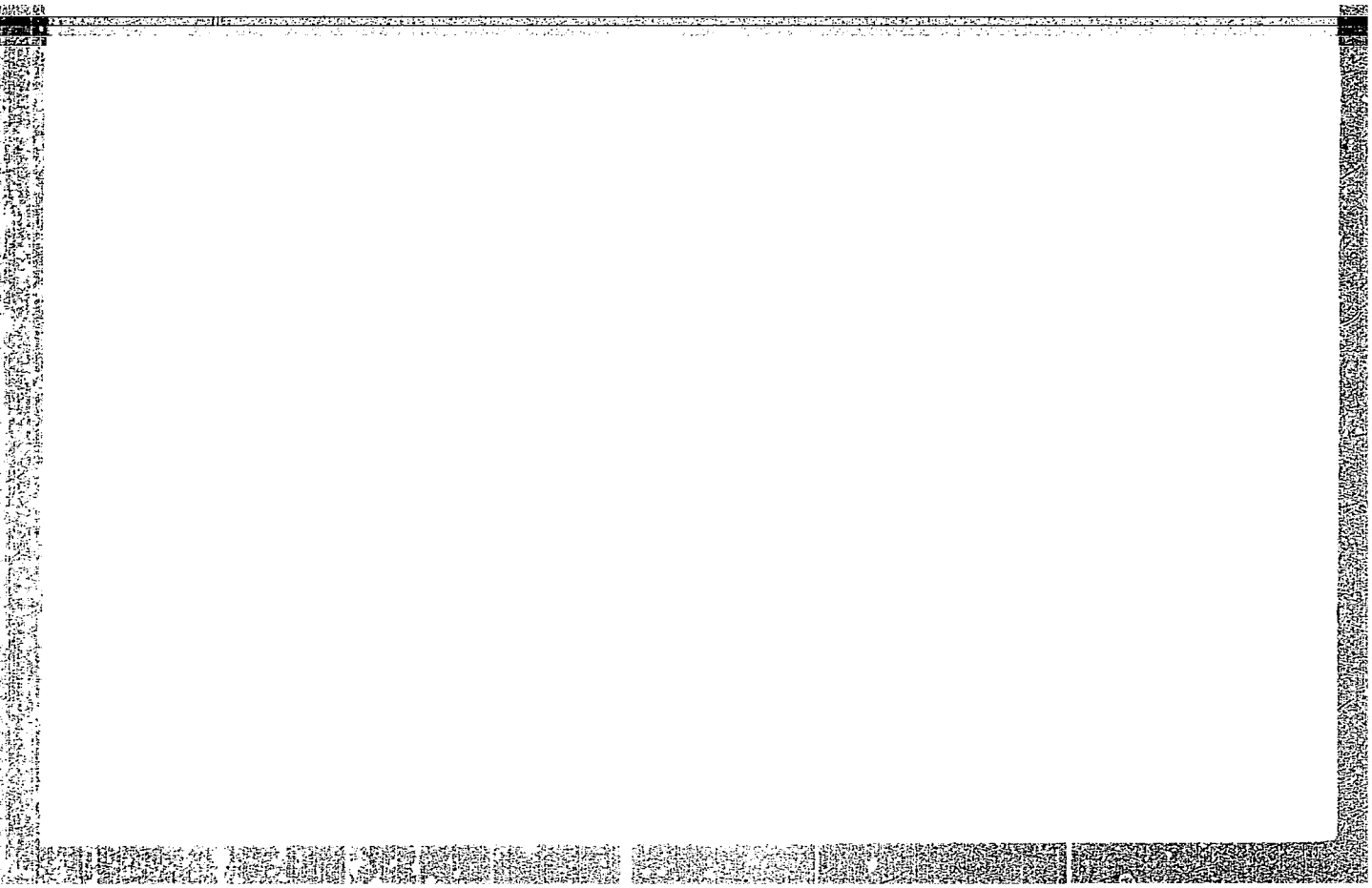
SUBMITTED: October 11, 1961

Card 3/3



APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756620017-6"





APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756620017-6"